

**THE RAILWAY GAZETTE**

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## Six Months' Freight Traffics

WITH the Ministry of Transport statistics for the month of June, 1938, are published aggregate figures relating to freight train traffic of all standard gauge railways in Great Britain for the 28 weeks ended July 9 last. Total goods and mineral carryings during this period were 148,582,625 tons, a decrease of 11,967,221 tons or 7.45 per cent. in comparison with the corresponding period of 1937. Receipts were £48,015,380, a reduction of £1,802,305 or 3.62 per cent. In the higher class merchandise of 25,486,647 tons there was a drop of 2,476,408 tons or 8.86 per cent., and the corresponding receipts of £21,947,657 were lower by £969,001 or 4.23 per cent. Of minerals and merchandise (Classes 1-6) 28,689,383 tons were carried, a fall of 2,250,982 tons or 7.28 per cent., and they produced receipts which were £358,933, or 4.53 per cent., lower at £7,569,411. Coal, coke, and patent fuel tons were 94,406,595, a decrease of 7,239,831 tons or 7.12 per cent., with receipts of £18,498,312 which were down £474,371 or 2.50 per cent. Live stock carryings were down 19.13 per cent., and the live stock receipts of £567,511 were lower by £93,595 or 14.16 per cent. In Classes 1-6 the fall was particularly noticeable during the four weeks ended June 11, as the tonnage was 36.26 per cent. less, and the receipts were 34.02 per cent. lower.

## "The Iron Road"

Immediately succeeding the celebration of the centenary of the first main line railway from London, a new play, the first of its kind to be staged, dealing with the struggles of railway pioneers and progress one hundred years ago,

is now running at the Birmingham Repertory Theatre. Bearing the appropriate title "The Iron Road," this play deals primarily with the pioneer days of the Liverpool & Manchester Railway and features the hardships and struggles of George Stephenson, his son Robert, and their faithful band of supporters against the opposition of landowners, superstition, local authority, and the law. The play is in three acts, and scenes are laid in George Stephenson's cottage at Killingworth, in the Houses of Parliament, at Chat Moss, and in Stephenson's workshop at Newcastle-on-Tyne. By the courtesy of the L.M.S.R., of which the Liverpool & Manchester now, of course, forms part, an exhibition of coloured prints, original poster designs, and models connected with the latter railway has been arranged in the theatre foyer during the run of the play. The story of the play was written by Hans Rehfsch and Rupert Downing and is produced by Herbert M. Prentice, who began his career with the Great Central Railway.

\* \* \*

## The Week's Traffics

The exceptional fall in passenger train and merchandise receipts on the L.M.S.R., due to some extent to the short-lived strike, was the chief reason for the net decrease of £184,000 in the traffics of the four main line companies for the past week in comparison with the corresponding week of 1937. For the 40th week the net decrease was £148,000.

	41st Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	%
L.M.S.R. ..	- 22,000	- 117,000	+ 3,000	- 136,000	- 2,030,000	- 3.86
L.N.E.R. ..	+ 12,000	- 34,000	- 10,000	- 32,000	- 1,557,000	- 4.07
G.W.R. ..	+ 1,000	- 20,000	+ 1,000	- 18,000	- 844,000	- 3.83
S.R. ..	+ 4,000	- 6,000	+ 4,000	+ 2,000	- 167,000	- 0.95

Comparisons with the corresponding week in 1936 are made in the following table:—

	41st Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	%
L.M.S.R. ..	- 1,000	- 82,000	+ 13,000	- 70,000	+ 158,000	+ 0.31
L.N.E.R. ..	+ 24,000	- 33,000	+ 11,000	+ 2,000	+ 231,000	+ 0.63
G.W.R. ..	+ 12,000	- 8,000	+ 11,000	+ 15,000	+ 321,000	+ 1.54
S.R. ..	+ 14,000	+ 2,000	+ 3,000	+ 19,000	+ 599,000	+ 3.55

Passenger train traffics to date in 1938 are £2,413,000 up in comparison with 1936, and coal receipts are £821,000 better, but merchandise earnings are down £1,925,000.

\* \* \*

## Sierra Leone Railway

Running lines in operation during 1937 consisted of the main line (Freetown—Pendembu) of 227½ miles and the Bauya—Makeni branch of 82½ miles, both on the 2 ft. 6 in. gauge. The year was the second in succession in which a surplus was shown over all outgoings. In the coaching earnings of £39,192 there was an improvement of £3,748 as compared with 1936, and the public goods revenue of £117,558 was £4,515 higher. Palm kernels provided 62 per cent. of the public goods revenue. Heavier railings of higher-rated imports account for the increase in revenue notwithstanding a slightly smaller total tonnage.

	1937	1936
Passengers .. .. .	633,499	540,990
Paying goods, tons .. .. .	76,298	76,887
Train-miles .. .. .	387,420	390,225
Operating ratio, per cent. .. .. .	67.93	64.88
Gross receipts .. .. .	207,676	200,243
Working expenditure .. .. .	141,068	129,908
Loan charges and sinking fund .. .. .	57,693	57,693
Surplus .. .. .	8,915	12,642

The advance in working expenditure is accounted for by

increased extraordinary expenditure, higher cost of coal, and additional expenditure on pensions and general charges.

\* \* \*

### Overseas Railway Traffics

South American railway traffics have for the most part continued to go back during the past fortnight, but in that period the Leopoldina has shown an improvement of £4,283 and 597,000 milreis, and the Central Uruguay has gone up £3,439 in sterling and \$28,267 in currency, bringing its advances to date to £12,873 and \$66,077. The Entre Rios has further strengthened its position to the extent of £4,546 in the two weeks, and shows an improvement of £19,981 to date. On the Argentine North Eastern the gain in the past fortnight has been £707, making the improvement for the 16 weeks £5,538. The Buenos Ayres Great Southern has, on the other hand, shown a fall in traffics of £8,374 in the two weeks.

	No. of Weekly Week Traffics	£	Inc. or Decrease	£	Aggregate Traffic	£	Inc. or Decrease
Buenos Ayres & Pacific ..	16th	71,712	-	11,601	1,104,655	-	146,339
Buenos Ayres Great Southern ..	16th	123,263	-	7,568	1,892,619	+	3,103
Buenos Ayres Western ..	16th	44,293	-	5,335	590,073	-	132,881
Central Argentine ..	16th	100,152	-	15,627	1,588,937	-	497,206
Canadian Pacific ..	41st	753,800	+	102,600	21,608,800	-	738,000
Bombay, Baroda & Central India	27th	226,125	+	900	4,483,875	-	82,575

On the Canadian Pacific traffics have increased by as much as £213,200 during the past fortnight.

\* \* \*

### The Hawkesbury River Bridge

Until May 1, 1889, communication between the portions of the New South Wales railway system based respectively on Sydney and on Newcastle necessitated ferrying passengers and luggage across the main channel of the Hawkesbury River at Mullet Creek. The railway from Sydney crossed the southern channel of the creek by a solid causeway, to Long Island, where a wharf for transshipment was established. On January 16, 1888, the line from Newcastle on the north shore reached Mullet Creek, and consideration was given to carrying it across the river to meet the southern system on Long Island. The channel to be spanned being nearly 3,000 ft. wide, a bridge was the only practicable means, and so the graceful and picturesquely-set structure we illustrate on page 686 was evolved, and opened nearly 50 years ago. The bridge has seven spans, six of 410 ft., and one of 414 ft. 3 in. All the piers except one are sunk over 100 ft. in the ground, and two penetrate to a depth of 119 ft. The longest pier, No. 6, measures 202 ft., and it was the fact that this one became slightly displaced during sinking that necessitated the seventh span being 4 ft. 3 in. longer than the others. The bridge provided the first continuous rail link between the four eastern Australian capitals.

\* \* \*

### The Transportation of Grain

The extent of the organisation which has been set up in all parts of the world for the movement of cereal crops by rail, road and sea, was the subject of a lecture entitled "Transporting the Grain Harvests of the World," by Mr. Cecil Bentham before the Institute of Transport on Tuesday last. Regarding the rôle played by the railways in this sphere, Mr. Bentham briefly reviewed the methods and equipment in the U.S.A., Canada, South Africa, Australia, Argentina, and Western Europe, including the British Isles. Canada and the U.S.A. are in his opinion the most experienced and advanced countries in the world in transporting large quantities of grain by rail, their methods having grown up round the bulk system. Special or specially-prepared 40-50 ton vehicles are provided in both these countries and in South Africa, in which the grain is carried loose, but Australia and

Argentina, though developing bulk handling methods, still use standard rolling stock; in the latter country both open and closed wagons are used and the grain loaded in sacks. Methods of loading and discharging are very much less advanced than those on the North American railways. In this country, apart from privately-owned vehicles, there are about 60 special bulk-grain wagons. Grain is normally conveyed in sacks in open wagons in lots of from four to six tons. During the past few years however a considerable reduction has been shown in the quantity carried. The tendency to locate more mills at the ports, which is very evident here, reduces the necessity for transport. Mr. Bentham's lecture dealt with every phase of grain transportation.

\* \* \*

### Hurricane in New England

Extraordinary damage was caused on September 21 by a hurricane in New England. In the graphic words of a New York correspondent, who has supplied us with some of the details set forth in our article on another page "It came as usual from the West Indies, but avoided Florida, and when off Cape Hatteras turned in our direction by a fluke and travelling at 60 m.p.h. side-swiped New York City, swept over Long Island, thence over Connecticut, Rhode Island, and Massachusetts, finally turning north and apparently dying out in the wilds of Northern Quebec. It had been preceded by eight consecutive days of rain which had already swollen the rivers and streams. In New York City the wind did not get above 68 m.p.h., but it blew at 100 on Long Island and the instruments on Harvard University observatory registered 186 m.p.h." The result of this phenomenal storm was a trail of devastation resembling in many places the effects of a modern war, and some 600 persons lost their lives in the brief period of its duration. The railways were very hard hit, as our article indicates. For over a week no train ran on the Boston & Albany main line between Worcester and Pittsfield; all main-line trains on the New York Central were hours late for several days; and on the New Haven alone, which probably fared worst of all, nothing at all moved between New Haven and Providence, a distance of 114 miles, for three days.

\* \* \*

### Beginning the Change at Victoria

The first stage in the resignalling of the Central Section lines at and near Victoria, Southern Railway, was effected last week-end, when colour-light signalling was introduced from Victoria station limits to Poupert's junction, as described on page 681. The work has been carried out on the principles now standard on this railway, but possesses one or two points of interest deserving of special mention. Battersea Park Junction signal box has been provided with a new all-electric frame, the original Sykes electro-mechanical equipment being abolished. The signals on the through lines, however, have been arranged to work automatically if the signalman leaves the levers reversed, so saving a number of movements he would otherwise have to make. On the local lines, with which the South London line connects, the usual working is in force. Grosvenor Road box has gone, but that at Battersea Pier is being retained, although it can be closed at certain hours, until the new large power box is ready at the terminus, when the junction with the Stewarts Lane lines will be controlled therefrom. The older power signalling, using three-position semaphores, on the Eastern Section side of the station remains undisturbed, but we understand that eventually the whole of the layout will be worked from the new box on the Central side on one uniform system.

### Model Engines for Hauling Passengers

An informal meeting of the Institution of Locomotive Engineers on October 13 debated the design of model steam locomotives for hauling passengers, with all the gravity and penetration expected in its pronouncements upon their full-size prototypes. A paper on the subject was read by Mr. J. N. Maskelyne, an Associate of the institution, who is Editor of the *Model Railway News* and President of the Stephenson Locomotive Society. Dealing with the factors influencing the design in models of the various elements of the steam engine, Mr. Maskelyne spoke of the merits of wide firebox types, such as Atlantics and Pacifics, where the gentleman-driver operates in his own park, and, having no traffic worries beyond the possibility of running down one of his own peacocks, can bestow most of his attention upon firing. Otherwise, a deep and narrow firebox is preferred. The whistle is an unexpected problem, for whereas more complicated details work satisfactorily in reduced size, a scale whistle is apt to become waterlogged and emit "a series of musical gurgles." In this matter, the model builder sacrifices realism less grudgingly than elsewhere, for sounds and scents are among the strongest appeals of the model. In fact, Mr. Maskelyne attributed the relatively small use of oil fuel to fondness for the smell of a coal fire.

\* \* \* \*

### A French Traffic Rearrangement

As mentioned in the article on French train service changes which appears on page 702 of this issue, some alterations of considerable importance have taken place from October 2 in the working of traffic between Paris and certain points in western France. Even in pre-grouping days, the French railways kept to well-defined areas of influence, and the only overlapping was the lengthy tentacle of the Paris—Orleans line that extended westwards from Saumur into State territory to Angers, Nantes, St. Nazaire, and Le Croisic, together with a branch from Savenay to Redon and Quimper which the State system took over some years ago. It has now been decided to rectify this anomaly by turning over the section west of Saumur to the Western Region, including the through services from Paris to Angers, Nantes, and beyond. With the help of the latter's Paris—Le Mans electrification, and a route shorter by 22½ miles, it is possible to provide a quicker service by the new route, the average journey time of the three daily Paris—Nantes *rapides* having been reduced by 15 min., and the best Paris—Nantes time having come down from 4 hr. 30 min. to 4 hr. 18 min. It is expected further to accelerate this service when improvements have been carried out to the branch from Le Mans to Angers. At the same time, the South-Western Region has taken over from the Western Region the through Paris—La Rochelle traffic, working it *via* Poitiers, and here the benefit, as expressed in a reduction of 32 min. in the best time, and of an hour in the average journey, is even greater. These alterations bring to an end all remaining regional overlapping in France.

\* \* \* \*

### Retrenchment in France

In these days of the all-conquering advance of high-speed railcar transport, with the economies that are claimed for this mode of propulsion, it comes as somewhat of a shock that in some drastic timetable alterations that have been found necessary by the authorities of the French National Railways, as set out on page 702 of this issue, the railcar services have been the first to disappear. In the Western Region there were a year ago four such services at over 70 m.p.h. in each direction daily between

Paris and Havre, which were cut to two in May last, and now to one; the Northern Region withdraws two of its four daily services from Lille to Paris and *vice versa*, as well as the 3½-hr. service between Paris and Liège; the Eastern Region has no longer a fast railcar service between Paris, Rheims, and Charleville, one of the Paris—Nancy cars disappears, another is shorn of its Nancy—Strasbourg run, and the Paris—Troyes car is no more; while the South Eastern Region withdraws its Paris—Lyons service, and another which ran between Macon and Geneva in connection with the streamlined Paris—Lyons steam service. More than half the French high-speed services maintained with railcars or railcar units have in this way been withdrawn. In addition, it has been deemed necessary to combine in one various steam-hauled services which have hitherto been duplicated, and the French operating authorities have cause to congratulate themselves in that the locomotive power now available will enable them to work 600-ton trains on these schedules, with numerous stops and smart point-to-point timings.

\* \* \* \*

### Track Fastenings

Increasing speeds and the now almost irresistible call for reduced spending to balance the decreasing traffic receipts of recent months, together make more important than ever the maintenance of permanent way in a firm condition with the least possible expenditure. The current call for maintenance economy has been urgent in France for longer than in this country, and particular attention has been paid to track fastenings which, if they are allowed to become loose, may result in the imposition of speed restrictions, a measure tolerated by the traffic departments only under pressure. Apart from that, the reduction of mechanical wear of sleepers is another important consideration. As we record on page 705, a simple expedient has been widely adopted of late on the French railways, for both flat-bottom and bull-head (chaired) track and not only to deal with loosened fastenings, but to forestall that condition where there are signs of wear. Briefly this comprises the insertion of a metal thread coincident with the worn thread in the wood, and embedded deeply enough in the sound material of the sleeper to ensure a permanently secure hold and avoid further wear of the timber.

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### Facts About the Underground

Further examples of the new kind of statistical advertisements, which, as we observed editorially last week, are now being presented by London Transport in the daily press, show aspects of Underground railway operation of which the passenger sees nothing. "Underground Power" traces the output of a power station to its application. It points out that the board owns two power stations, 64 substations, 212 convertor units, 631 miles of high-tension cables, 373 feeds into the track and 1,153 switches and circuit-breakers. This complicated network of machinery and of feeders supplies about 2,000,000 units of electricity daily—1,660,000 units to drive trains, 100,000 units to move escalators and lifts, 25,000 units to operate signals, 75,000 units to light stations, and 25,000 units to work fans and pumps. "Underground Night," the third in the series, presents the unknown army which occupies the railway between 1 a.m. and 5 a.m., when the current is cut off. The Underground is divided into 44 lengths in each of which every rail, bond and point must be inspected. Equipment is checked over by 153 linesmen; signals and points are checked every night. To clean up litter and dirt 695 men work in gangs; 350 men attend to telephones, lifts, escalators, fans, and pumps and to all the apparatus necessary to ensure that the railway is both safe and comfortable.



## The Late Sir Henry Fowler

THOSE who, like ourselves, could claim a fairly close acquaintance with the late Sir Henry Fowler, an account of whose career appears on page 685, knew him for his abilities as an engineer and his untiring activity of mind and body. He was essentially railway-minded, and an enthusiastic student and practitioner of locomotive engineering. His chief interest, or rather one of his chief interests, was the subject of the locomotive boiler, and he never tired of talking or writing about it; he possessed a knowledge of boiler design and construction that was really profound, and was never happier than when evolving new designs, or training his thoughts on experimental practices, having as their aim the improvement of the boiler in some shape or form. We can call to mind two occasions when Sir Henry, in the course of conversations we had with him, waxed especially enthusiastic on the topic: one, on the platform of the Nord station in Brussels during a fairly lengthy wait for connecting trains; and the other, inside the firebox of a Class 4 express engine at Kentish Town. At both of these times he happened to be in the throes of a specially intensive investigation associated with superheating and fire-box design and conditions, and he had a lot to say which, to us, was particularly interesting and informative. Every aspect of locomotive practice claimed his undivided attention, and his training and long experience as a railway mechanical engineer, first in subordinate and later for many years in the chief positions, qualified him to speak with authority on the subject. When it became imperative that a new and more powerful type of express locomotive should be introduced on the L.M.S.R., he planned the "Royal Scot" 4-6-0 class, one of the best known of any type of engine on a British railway. He was also responsible for other designs, and for the rebuilding and improvement of existing classes to keep them abreast of the work demanded of them. He was particularly active in his support of the institutions to which he belonged, his attendances at their meetings being frequent and his contributions to the discussions always interesting and of value. His other activities were many and varied, and when once asked whether he "preferred to be regarded as an individual or an institution" his reply was, "he supposed he could not complain whichever term was employed." One of his best known associations, and one in which he always took the keenest interest, was with the International Railway Congress, of which he was a member of the Permanent Commission. It was a great disappointment to him that he could not attend last year's Congress in Paris. Sir Henry was possessed of a strong individuality, in character as well as in his professional outlook.

## South Indian Railway

DURING the financial year ended March 31, 1938, the company worked on behalf of the Government of India 2,233½ miles of line, of which 599 miles were of 5 ft. 6 in. gauge, 1,535½ of metre gauge, and 99 of narrow gauge. In addition, the company worked for other owners the following metre gauge lines: Pondicherry Railway 8 miles; Karaikkal Railway 15 miles; Travancore Railway 148 miles; Coimbatore District Board Railway 25 miles; and Tinnevely District Board Railway 38 miles. It also worked on behalf of the Cochin State the broad gauge Shoranur—Cochin Railway of 65 miles. Gross earnings for the year under review showed a net increase of Rs. 20,47,919 or 4.14 per cent., and in working expenses there was a net advance of Rs. 11,08,921 or 3.66 per cent., so that net earnings were higher by Rs. 9,38,998 or 4.90

per cent. The company's share of surplus profits remitted to London amounted to Rs. 1,17,431, realising £8,746, as compared with Rs. 70,282 and £5,299 for 1936-37. To stockholders the total distribution for the year is 5 per cent. (1½ per cent. from surplus profits and 3½ per cent. from guaranteed interest) as against a total of 4½ per cent. for 1936-37. The accompanying table compares some operating figures:—

	1937-38	1936-37
Passengers carried .. ..	54,881,418	48,211,047
Public goods traffic, tons .. ..	3,211,171	3,080,319
ton-miles .. ..	424,579,099	396,269,909
Average haul, miles .. ..	132	129
Operating ratio, per cent. .. ..	60.98	61.26
	Rs.	Rs.
Passenger receipts .. ..	2,04,77,111	1,93,18,304
Public goods receipts .. ..	2,50,89,602	2,43,69,938
Gross earnings .. ..	5,15,48,561	4,95,00,612
Expenses .. ..	3,14,33,653	3,03,24,732
Net receipts .. ..	2,01,14,908	1,91,75,910

In third class traffic, which contributed 99 per cent. of the total numbers carried and 93 per cent. of passenger earnings, there was an increase of 13.9 per cent. in numbers and of 6.54 per cent. in receipts. Improvement was also shown in second and intermediate traffic, but first class fell off. Parcels receipts (Rs. 17,38,207) were Rs. 98,443 higher. Earnings from public goods traffic were higher by Rs. 7,19,664 or 2.95 per cent., with an increase in quantity of 130,852 tons or 4.25 per cent. On account of renewals and replacements of permanent way, works, and rolling stock the sum of Rs. 45,17,150 was expended during the year under review, as against Rs. 42,35,110 in the previous year. There was an increase of Rs. 8,26,881 under ordinary working expenses.

## Co-ordination of Transport

IN October, 1937, the Minister of Transport published a report by the Transport Advisory Council on Service and Rates in the course of which a number of important recommendations were made on wages and rates and on certain other aspects of road, rail, and canal transport. The council, it will be remembered, was appointed as a result of a recommendation contained in the Final Report of the Royal Commission on Transport, given effect in the Road and Rail Traffic Act, 1933, Section 46 of which enacted that this body should be constituted for the purpose of giving advice and assistance to the Minister in connection with the discharge by him of his functions in relation to the means of, and facilities for, transport and their co-ordination, improvement and development. In its October report the Council indicated that it was necessary to defer the question of coastwise shipping for further consideration because it differed so widely from the other three forms of transport. The council has now had time to complete its inquiries into this method of transport, and its report, dated July 7, has recently been published by the Minister of Transport. The council remarks at the outset that a clear distinction must be drawn between "liner" coastwise shipping and "tramp" coastwise shipping, and accordingly deals with them separately. So far as the former is concerned, it is recorded that it was represented to the council that there was only a very small number of coasting liner companies outside the railway-coastwise liner conference; that the application of any system of licensing or registration to the coasting trade might have injurious effects on other branches of shipping; that consideration should be given to the stable position of the individual companies and the negligible amount of unregulated competition between them; and that an increased stability of road



rates might be expected from the application of the scheme outlined in the previous report of the council.

It is pointed out that the coastwise liner companies, which are comparatively few in number, have agreed within their own industry a comprehensive schedule of rates for the major traffics which they carry. This includes rates for the carriage of general merchandise between ports and places in Great Britain in which the liner companies and the railway companies are jointly interested, and all such rates are discussed and, if possible, agreed before they are put into operation. The coastwise liner companies, however, while desirous of becoming a definite component of a co-ordinated system of transport, see no necessity for the setting up of a new rates structure to cover their own industry. They also represented that, when the proposed rates structure for the road haulage industry is set up, the coastal shipping rates, so far as they affect other transport activities, will be effectively controlled through the medium of voluntary rate agreements. The council unanimously recognises the soundness of these views, and reached the conclusion that the existing voluntary agreement between the railways and coastwise liner companies should be extended to, and ultimately embrace, road haulage and the canal companies; that it should be of long duration and provide, if found necessary, for arbitration by mutual consent in the event of failure to agree on important rates questions; and that the existing rates structure, supplemented by such a voluntary agreement, would secure effective rate control of the coastwise liner companies and form a useful part of any general scheme of co-ordination.

So far as the coastwise tramp shipping trade is concerned, it was represented to the council that coastwise tramp freights involve the making of *ad hoc* bargains for every separate consignment, and that publication of rates would therefore be impracticable and indeed an irrelevant concept in connection with the tramp trade. The council was also informed that a measure of effective co-operation on rates between coastwise tramp owners had been established and that the owners desired that the fullest possible advantage should be taken of mutual co-operation wherever practicable in their own trade. In these circumstances the council expressed itself satisfied that, while coastwise tramp owners are anxious to join in measures of co-operation with other forms of transport as far as this is possible, it is impracticable to apply a rates structure to the coastwise tramp trade at present.

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### Buenos Ayres Great Southern Railway

THE failure to pay any dividend for the financial year ended June 30 last, except 1 per cent. on the 5 per cent. preference stock, is clearly explained by the figures in the recently published report. Although gross receipts decreased by only £112,366 or 1.02 per cent., expenses rose by £401,430, or 5.48 per cent., leaving net receipts lower by £513,796 or 14.03 per cent. In addition, exchange differences were £13,221 greater, at £1,311,043, and the charges under working agreements increased from £546,949 to £580,675, due to higher commitments in respect of the Bahia Blanca & North Western and the Buenos Ayres Midland Railways. There was also a new item of £41,656 in respect of fire insurance and claims and casualties. On the other hand the net expenditure for renewals was reduced from £282,335 to £186,094. The balance available for dividends was only £156,064, of which £80,000 was absorbed by the 1 per cent. dividend on the 5 per cent. preference stock, leaving £76,064 to be carried forward, as against £20,829 brought in. For the previous year the full dividend was paid on the 5

per cent. preference stock, requiring £400,000, and 3 per cent. was paid on the 6 per cent. preference stock absorbing £240,000.

Adverse climatic conditions, which seriously damaged both the fine grains and the maize crop, caused a sharp set-back in the favourable conditions which had prevailed during the greater part of 1937. Yet, in spite of the disappointing results of the harvest, local and general passenger traffic was well maintained. Passengers increased in numbers by 4,744,402 or 9.20 per cent., and passenger receipts by £193,034 or 7.15 per cent., stimulated by the improvement in both local and long distance services and by a large reduction in local tariffs round Buenos Aires and Bahia Blanca. Luggage and parcels produced £998,957, an increase of £26,933 or 2.77 per cent. Public goods traffic as a whole showed a decline of 463,241 tons or 5.45 per cent., with a decrease in receipts of £376,464 or 6.76 per cent. In cereal traffics the tonnage was 2,202,896, a diminution of 1,018,857 tons or 31.62 per cent., with receipts of £1,335,750, which were lower by £504,556 or 27.42 per cent. An increase in the quantities of low-rated commodities combined with the large decrease in the tonnage of the more highly remunerative grain traffic resulted in a fall in ton-kilometre receipts from 0.618d. to 0.557d. Some operating figures are compared here- with:—

	1937-38	1936-37
Number of passengers ..	56,312,497	51,568,095
Tons of goods ..	8,037,450	8,500,691
Ton-kilometres, goods ..	2,236,055,305	2,161,754,918
Average haul, goods and live-stock ..	272.01 km.	250.58 km.
Train-kilometres ..	26,768,821	24,294,160
Passenger receipts ..	2,892,110	2,699,076
Goods receipts ..	5,189,279	5,565,743
Gross receipts ..	10,879,900	10,992,266
Working expenses ..	7,730,277	7,328,847
Net receipts ..	3,149,623	3,663,419

Figures for goods train operation show that the actual work done during the year reached a record. Goods train kilometres increased by 10 per cent., and public traffic ton-kilometres by 74,300,387, notwithstanding the fall in the quantity of goods transported. Rolling stock maintenance increased by £148,048 or 10 per cent., mainly because of the necessity for heavier wagon repairs.

\* \* \* \*

### Braking and Signalling for High Speed

MR. A. W. WOODBRIDGE'S paper, read before the Institution of Railway Signal Engineers on October 5, and abridged in our issue for October 7, continued the important subject brought before that body on March 3 by Mr. F. B. Egginton, namely, the problems confronting signal engineers and others arising from the running of the extra high-speed trains of recent years, not only in Great Britain but on the Continent and in America. For such trains to run satisfactorily the line must, of course, be clear for a sufficient distance ahead, which implies that other trains must, if necessary, be shunted early enough for the others to pass without check. This is primarily a timetable matter, concerning the planning of the traffic movements. In theory, no signalling is really necessary, except to show that the track itself has remained undisturbed, as long as the train spacing allowed for on this operating basis is maintained, but the high-speed train is, as any other, liable to be required to stop because matters have not been able to proceed according to plan. We are then faced with the necessity of bringing it to a stand unexpectedly and with certainty before it can meet an obstruction, and this in turn requires us to have signalling and braking systems adequate for the purpose, with the assurance that they will be correctly used. In itself the

problem is not new. It has merely become more acute, due to the noticeable increase in the speed of a few trains. The difficulties associated with distant signals and the provision of adequate stopping distances have long been with us, if in less pressing form, in the well-known short-section distant signal problem, which can be met only by a compromise in our two-position semaphore system, since the signal aspects are incapable of conveying all the messages required to solve it completely.

What we now require to do is to stop the high-speed train, when necessary, in the shortest possible time and with the minimum discomfort to passengers, giving the warning to stop in such a way and at such a distance from the fouling point that there is no difficulty in complying with it. Improved braking is thus indispensable and the difficulties would undoubtedly be diminished if braking distances could be cut down. Very long braking distances, up to as much as 2,300 yd., are now being asked for in this country for some trains, but experience gained on the Continent and in America appears to show that this position could be much improved. The Reichsbahn now allows 1,093 yd. (1,000 m.) between distant and stop signals on the high-speed routes. If an express railcar travelling at 100 m.p.h. ignores the distant warning—that is if the driver neglects to operate his vigilance button—the brakes are set in action in five seconds and the car, which will have gone over 200 m. in that interval, will be stopped in a little over 100 m. beyond the stop signal. An ordinary steam passenger train running at 75 m.p.h. would be stopped about 150 m. in rear of the signal, but we are unaware what the figures would be for a 100 m.p.h. train. Only 200 m. (219 yd.) overlap is provided. This is possible, of course, only with the very complete form of A.T.C. adopted.

With no A.T.C., as applies at present on some of our lines, special block regulations, maintaining a long overlap, are imperative, because we must always reckon with a possible tardy observation of signals and delay in the driver taking action. At very high speeds a few seconds of such delay enormously increase the risk of overrunning

the stop signal. If we do not improve our braking and add some form of A.T.C. to it we shall be compelled to place our distant signals a long way from their stop signals, with the consequent disadvantages, or maintain the special block working already in use on some sections, giving a large margin of overlap. The alternative is to recast our signal aspects entirely and institute a multiple-aspect system, as seen on some American lines, in which a series of graduated warning indications precedes a stop indication, allowing any class of train to obey them with ease. This, of course, is only carrying the well-known four-aspect system a step further. Nothing better seems feasible with fixed signals, or ordinary continuous cab signals, which merely make the aspects constantly visible, but inventors, such as Mr. C. W. Prescott, have not been wanting who have proposed cab signals and A.T.C. appliances based on what may be called a totalisation principle, integrating all the circumstances—the speed, weight, &c., of the train and the gradient it is running on with the conditions of the track ahead of it—in an attempt to make a variable and graduated block system, moving with the trains, telling the driver at any moment, and on the engine, his maximum permissible speed.

Any such equipment could not fail to be costly and there seems little likelihood of its being adopted for a long time, to say the least. If expense were no object the signal engineer could provide anything the most exacting traffic officer could ask for, but it is a considerable factor at present and we must perforce be content with effecting such improvements as our resources permit. The most fruitful immediate course appears to us to be to obtain more efficient braking, if that can be done, and then add some form of A.T.C. with cab signal to ensure that any warning indication is acted on the instant the necessity arises. This would probably enable us to dispense with special block regulations where the older type of signalling remained, except perhaps at a few places. Nevertheless the gradual extension of a multiple-aspect system of indications throughout main high-speed lines should be kept constantly in view.

## PUBLICATIONS RECEIVED

**The Stringlining of Curves Made Easy.** By Charles H. Bartlett. Chicago: Simmons-Boardman Publishing Company, 105, West Adam Street. Reprinted from *Railway Engineering and Maintenance*. 11 in. x 8½ in. Price 50 cents.—The public is demanding higher speed in all forms of travel; consequently it becomes of increasing importance that railway curves should be maintained in true alignment and that suitable transition or spiral curves should be inserted at each end of the circular curves. Stringlining of curves has been in use for many years, and has largely superseded the use of instruments in dealing with the realignment of existing curves. There are two general methods of stringlining, one the graphical method of plotting on squared paper and the other the arithmetical method, which is the method dealt with by Mr. Bartlett. The advantages of stringlining are the speed with which the work can be carried out and the flexibility of the method enabling the throw of the curve or slew to be kept within any desired limits, due either to limitation of slew or to the existence of

obstacles limiting the possible movement of the track.

The articles describe in detail the taking of the preliminary data of the existing curve; determining the spiral or transition curve to be used, together with the new versed sines or ordinates for the circular curve; the arithmetical operations by which the amount of slew is obtained and kept within the limits required; also the principles involved in balancing the new alignment so that it will be tangent in at either end of the existing curve. Examples are given so that the procedure adopted can be readily followed, methods given showing how to obtain the necessary versed sines for spirals for any speed, and the adjustments that can be made thereto in order to keep the slew within the necessary limits. This is a useful reprint of a series of articles helpful to all who are interested in the stringlining of curves, and fully explanatory and printed in clear type.

**"How the L.N.E.R. Expresses Freight."**—A useful booklet for traders, setting out some of the facilities offered

by the company for expressing freight, has been issued gratis by the L.N.E.R. A striking action photograph of an express goods train drawn by one of the recently-introduced "Green Arrow" class locomotives is reproduced on the front and back covers, between which are 44 pages of diagrams and tables illustrating the principal fast trains available. Cross-country routes are shown, as well as the principal routes between London, the North of England, and Scotland. The tables indicate not only the due arrival times at destination, but also the normal times at which the merchandise is available for delivery. In many places the latter time is fixed by the requirements of the consignees and local trading practice. The departure times from starting points are so arranged that, by high-speed running throughout, the expresses may meet the trading needs at destination. Thus, an early morning market at destination necessitates in some cases an early departure.

**Holidays Overseas and Sea Cruises.**—An attractive booklet has reached us from Dean & Dawson Limited of 7, Blandford Square, N.W.1, containing a wide variety of suggestions for overseas holidays this winter.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### London Transport "C" Stock

Hilltop, Godalming, Surrey  
October 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your editorial notes of October 14 you state that I had proposed a reduced standard rate of interest for the London Passenger Transport Board "C" Stock with a State guarantee for such reduced rate. I feel sure that if you will read my letter to *The Times* of October 10 and possibly give your readers a chance of doing so in your columns it will be agreed that there is nothing in my objective analysis of the larger issues at stake which will give the slightest grounds for the statement you have made. As the proposal attributed to me would be entirely contrary to the opinion I expressed in the course of my broadcast on June 16 I should be obliged if you would publish a correction in your next issue.

Yours faithfully,  
H. O. MANCE

[We regret having, in our brief summary of the correspondence on this subject, treated Sir H. Osborne Mance's reference to a Government guarantee as an expression of his own views, whereas a careful reading of his communication to *The Times* shows that he was merely outlining various attitudes that some persons might adopt in certain eventualities. We have pleasure, accordingly, in reproducing below the major part of his communication:—

"Now we are up against the question of whether the L.P.T.B. is showing signs of not being the healthy self-supporting concern it was intended to be. If this were really to be the case in the long view then we must expect suggestions as already published by you for reducing the interest on the "C" stock subject to the "amplest possible security." This implies a Government guarantee which would equally cover the senior stocks and we come at once virtually to the policy that the community as a whole and not the users only should contribute to the cost of transport.

"A State-guaranteed or even a State-owned undertaking might, however, still be run by a board with a commercial constitution. Doubtless the resulting reduction of interest would make it easy, for a time, for the undertaking to meet its interest obligations, but the forces which have increased expenditure during the last few years—including presumably increased wages and unremunerative services—will hardly grow less under state control, so that there will always remain the ultimate prospect of direct subsidy to London Transport from public funds.

"A failure of the L.P.T.B. scheme would thus constitute a serious setback to the endeavour to obtain the benefits of large-scale organisation of a public monopoly under private ownership and with purely commercial unsubsidised operation free from political influence."

### Cross-Country on the Southern

16, Windsor Court,  
Jubilee Place, S.W.3  
October 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read the letter printed in your issue of October 7, from Mr. J. Ivan Bowerman, and relating to cross-country travelling on the Southern Railway, with great interest.

Returning last month from the Continent by the Calais boat due at 1.15 p.m., and having to go to Southampton the same day, I thought it would be a good idea to travel via Dover and Folkestone and along the South Coast to Southampton. After a lengthy search through the Southern Railway timetable, I found that a train left Dover Priory station at 1.55, enabling me to reach Southampton Central at 7.53 p.m., after changing five times—at Ashford, Hastings, Lewes, Brighton, and Portsmouth—and taking all but six

hours for the 150 miles. I could also take another train, leaving Dover Marine at 3.18 p.m. (supposing the boat were late), reaching Southampton Central at 10.38 p.m., and making similar changes of train on the way.

This can hardly be described as good—and by a long way. Without making such drastic suggestions as Mr. Bowerman, I think more thought could be given to cross-country travel. This traffic may not be very important, and through trains not justified or not warranted, but it should be kept in mind that good connections encourage and facilitate travel; a timetable from which one can find what one needs at a glance is also advantageous.

Faithfully yours,  
L. M. WESTLAKE

[Our correspondent could, of course, have reached his destination earlier (he probably did) by taking the boat train up to Victoria, due there at 3.30, and the 4.45 p.m. from Waterloo which reaches Southampton at 6.16 p.m.—ED. R.G.]

### Timetables

60, Sylvan Avenue, Timperley  
Cheshire, September 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I suggest that the enclosed cutting, taken from a recent issue of the *Manchester Evening Chronicle*, is not altogether irrelevant to the discussion on the shortcomings of the main-line railway companies' timetables:—

"As I came out of Exchange station I passed—or nearly passed—a man who was studying the list of 'Departures.' He did not seem to be enjoying it, either.

"'Excuse me, mister,' he said, 'but if you're not in a hurry I wonder if you'd mind explaining this to me. I'm a bit bad at reading.' So I read 'this,' and at once understood the poor fellow's confusion.

"Here, what got him groggy, is the official story of the 'Departure' of the:—

"12.5 p.m.—Warrington, Chester, Prestatyn, Rhyl, Colwyn Bay, Llandudno Junction, Deganwy, Llandudno (also on Saturdays until August 27, Bangor and stations to Holyhead and Holywell Junction, Saturdays excepted, and Frodsham and Helsby except on Saturdays, and on Saturdays, September 10, 17, and 24, and Abergele on Saturdays, daily commencing September 12).

"I read it through twice. It seemed necessary.

"'What I want to know,' pleaded the man, 'is: does it run today?'

"I read the masterpiece even a third time, and came to certain conclusions, but thought it best to send the man to the booking office for expert guidance."

Yours faithfully,  
R. A. DANE

THE DOVER, ST. MARGARETS & MARTIN MILL LIGHT RAILWAYS.—For the twenty-eighth time in 28 years, the lease of life of a railway which does not exist has been renewed. The Ministry of Transport announced in *The London Gazette* on October 11 that the Minister has extended for another year the period for the completion of the whole of the Dover, St. Margaret's & Martin Mill Light Railways. It was in 1909 that a company secured an order for building the railway. The original Order expired on October 11, 1910, when it was first renewed for a further twelve months. Since then it has been regularly renewed every year. Last year's renewal was recorded on page 622 of our October 8, 1937, issue. "Only a few bits of track exist," a Press Association reporter was told at Dover recently. "The work has never gone forward and there seems no prospect of its being re-started. The Ministry's extension of the period of the Order, however, keeps the company's right intact in the event of its wishing to go on with the project."



## THE SCRAP HEAP

### WISECRACKS

Footprints on the sands of time cannot be made by sitting down.

Opportunity is half the battle and the other half is the ability to take it.—*Sir Charles Barrie (M.P. for Southampton and a Director of the L.N.E.R.) at the Southampton Docks Centenary Luncheon.*

During the seven months that the Empire Exhibition, Glasgow, has been open, the railway companies have co-operated with the authorities in advertising it extensively. The L.N.E.R. alone has displayed and distributed 26,500 posters, 150,000 folders, 50,000 booklets, and 1,600,000 handbills, as well as showcards, banner-messages, and models of the now famous Exhibition lion. L.N.E.R. excursion advertisements have also appeared weekly in the newspapers throughout the system during the whole period of the exhibition.

The Roman Catholic weekly newspaper, *The Universe*, recently published the following:—

Canon Fellows, formerly rector of St. Matthew's, Northwood, is a railway expert and historian of repute. Besides being a frequent contributor to *The Railway Magazine*, he is the author of a "History of the Canterbury and Whitstable Railway." Why is it, by the way, that so many Catholic priests are interested and learned in railway lore? Can it be due to reaction against the curious attitude of Pius IX, who, it is said, loathed the iron road so heartily that when discussing it with a Frenchman he exclaimed witheringly, "Chemin de fer? Ah, non! Chemin d'enfer!"

### GOVERNMENT PUBLIC RELATIONS OFFICERS

What an Australian journalist thinks of the news service from Whitehall is revealed in an interview printed in the *Newspaper News*, of Sydney, with Mr. Erl Gray.

"Each department in London has a publicity section, the chief job of which seems to be to keep journalists from getting news or making contact with the heads of departments," he says.

At present practically all the Government departments have "public relations" or "press" officers. These include the British Broadcasting Corporation, the War Office, Admiralty, Air Ministry, Home Office (with a separate department for Air Raid Precautions), the Foreign Office, Colonial Office, Ministry of Health, the Board of Trade, Ministry of Labour, Ministry of Transport, Board of Agriculture and Fisheries (with many sub-departments), but these departments, it is

found in practice, will reveal only routine news.

More often than not, they are permitted only to act as "buffers" between officials and inquiring pressmen. When asked for information, they nearly always have to ask for time to make inquiries.—*From "The Advertiser's Weekly."*

There was an amusing incident which showed the general uselessness of armoured trains. The train was one which had been built by the Nationalists. It was merely composed of two trucks with double sheets of boiler-plating built up round them and embrasures for one field-gun and four machine guns. The engine, also protected, was in the middle, between the two trucks. The railway line which runs from Talavera de la Reina to Madrid had been specially repaired to allow of the passage of the armoured train, but the track was occasionally on an embankment and occasionally in a cutting. Each time the guns of the train might have been useful it was found to be in a cutting, and each time the enemy artillery fire was dangerous the track was on an embankment, and so the train could not move forward. When on my way back I arrived at the level crossing south of Cabanas de la Sagrada, I saw the train drawn up in a cutting. It

had gone forward past Villaluenga and Azana towards Illescas, and then had returned at full speed. The lieutenant in charge asked us for news of what had been happening. "I have been shut up in that beastly thing," he said, "and I do not know where we are. I have just seen great activity at Illescas, and I do not know whether the enemy are not going to counter-attack." He was relieved, but none too pleased, all the same, when we told him that Illescas had been taken an hour or more previously, and that the activity he had seen was that of his own troops.—*From "The March of a Nation," by Harold G. Cardozo.*

In September, 1842, a clergyman booked two first class single tickets by the London & Birmingham Railway from Euston to Boxmoor. On his arrival at the latter station there was no porter to open the door of his compartment, so he rode on to Tring and there hired a road conveyance to his destination. Today this would doubtless have resulted in the railway company charging the passenger an excess fare, but in 1842 the incident had a different sequel. The clergyman attempted (unsuccessfully) to secure 10s. from the railway to cover the cost of carriage hire! For 96 years the tickets have remained in the railway archives attached to the letter of complaint, and they were recently unearthed when relics were being sought for the Euston centenary exhibition.



**London and Birmingham Railway.**

**FIRST CLASS.**

No. 847 184

**6 o'Clock—Departure.**

**LONDON to BOXMOOR.**

PAID 6/6

Agent.

THE COMPANY WILL NOT BE RESPONSIBLE FOR ANY PASSENGER'S LUGGAGE, UNLESS BOOKED AND PAID FOR.

(See over.)

**DOWN.**

**SEPTEMBER.**



**London and Birmingham Railway.**

**FIRST CLASS.**

No. 848 184

**6 o'Clock—Departure.**

**LONDON to BOXMOOR.**

PAID 6/6

Agent.

THE COMPANY WILL NOT BE RESPONSIBLE FOR ANY PASSENGER'S LUGGAGE, UNLESS BOOKED AND PAID FOR.

(See over.)

**DOWN.**

**SEPTEMBER.**

Full-sized reproductions of two London & Birmingham Railway tickets of 1842, recently discovered by the L.M.S.R. in the unusual circumstances outlined above

## OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

### NEW ZEALAND

#### Automatic Signalling and Traffic Control

The provision of automatic signalling between Pictou and Ward, and the installation of a telephone line from Pictou to Waipara, on the South Island main trunk extension, has been approved. When the line is completed the department intends to apply a system of traffic control over the whole section.

#### Rolling Stock Programme

For service in the South Island 15 passenger cars and 436 wagons, are now being built at the Addington (Christchurch) workshops. Of the passenger vehicles 13 are 56-ft. one-compartment, second class cars, seating 59 passengers, and the other two are 56-ft. first class cars with one 6- and one 29-passenger compartment. The interior finish is brown Rexine on the walls and white Rexine on the ceilings, with a floor covering of brown linoleum. The seat upholstery is antique red leather, and the chairs are fitted with Dunlopillo seats and Hairlok backs. Steam heating and drop windows are provided. The finish of the first class cars is the same as in the day compartment of the combined sleeper and day cars, the walls being covered with brown Rexine, the ceiling in silver Rexine, and the floor with mottle red rubber; revolving bucket type chairs are installed. These cars are also air-conditioned, the grilles for delivering the cleansed and heated air being spaced in a duct running along the crown of the ceiling.

The wagons are of the following types: 120 "J" type (sheep), 300 "La" type (high-sided), 10 "W" type (insulated perishables) and 6 "Xb" type (fruit) wagons. They may be described as follows:—

The "J" sheep wagons are of the latest type, with underframes of copper-bearing steel to minimise the corrosion customary in stock wagons. They are fitted with grated floors to facilitate cleaning, and special attention is paid in the design to eliminate any protruding bolts, &c., which might damage the sheep.

The "La" standard high-sided steel wagons are similar to the latest type of existing general utility wagon stock.

The "W" insulated box wagons for frozen meat and butter are of the latest type, with improved cork insulation in roof, walls, and floor. The inner walls are lined with galvanised steel covered plywood to facilitate cleaning, and the doors are fitted with air-tight gaskets. The springing has been improved, and the capacity increased to 10 tons.

The "Xb" fruit wagons are of the louvered type, providing the maximum of ventilation. An improved feature is the fitting of shutters on the inside of the louvers to render the wagons suitable for ordinary traffic in the off season. The louvers are of steel, and can be taken out in complete units for repairs or replacement.

Besides the new rolling-stock work in hand, special provision is made to increase repair facilities as part of the railway re-arrangement scheme at Christchurch. A contract has now been let for the erection of a new steel and concrete car and wagon repair shed, measuring 220 ft. by 110 ft.

#### Remarkable Catering Increase

During April, May, and June, 21,238 meals were served at South Island refreshment rooms as compared with 15,989 in the corresponding months last year, an increase of 5,249 or nearly 33 per cent. The total revenue from South Island refreshment rooms and bookstalls in this quarter was £18,322, an increase of £5,190 over last year's figure.

#### Record Run by Railcar

The fastest journey ever made by rail from Wellington to Auckland (426 miles) was accomplished on August 21, by the nine-seater railcar used by the General Manager, Mr. G. H. Mackley, for departmental purposes. Leaving Wellington at 4.20 a.m. the car arrived at Auckland at 2.20 p.m., the over-all time being 10 hr. Actual running time, however, was only 8 hr. 56 min. Mr. Mackley is confident that the new diesel standard passenger railcars, now under trial, will be able still further to reduce the running time between Auckland and Wellington. The limited expresses—the fastest trains at present operating on this route—are scheduled to do the journey in 14½ hr.

### INDIA

#### Pilgrim Touring Train

The Great Indian Peninsula Railway has just arranged and carried out a remarkable 30-day cruise by special train for Hindu pilgrims, enabling them to visit all the principal centres of pilgrimage throughout the sub-continent. Some 350 devout Hindus availed themselves of this unique opportunity for bathing in the sacred waters of the Ganges and elsewhere. The train left No. 9 platform at Victoria terminus, Bombay, on September 3, and, after travelling in easy stages as far northwards as Kurukshetra in the Punjab, turned east and south via Hardwar, Lucknow, Benares, and Gaya to Calcutta. Thence Puri and Bezpada were visited on the east coast, and after a day at Hyderabad, Bombay was scheduled to be reached on October 2.

Considerable organisation in co-operation with the various other railways traversed was necessary, and halts of from half-a-day to three days were arranged at the various stopping places. Morning teas, afternoon meals, evening teas, and dinners were provided by a catering contractor who also acted as banker, upon whom the tourists could

draw money as required during the cruise. Hot water for bathing and laundering facilities were available on the train, which also carried a doctor and a representative of the railway to look after the arrangements and comfort of the passengers.

#### New 84-mile Broad Gauge Railway

Sanction has been accorded by the Railway Board to the construction, by the agency of the North Western Railway, of a 5-ft. 6-in. gauge railway between Larkana and Jacobabad in Sind. This line, which will form a section of the Sind Right Bank (of the Indus) Feeder Railways and be 83.9 miles in length, will follow the alignment of the existing 2-ft. 6-in. gauge railway for part of this distance, and the narrow gauge line, which is owned by Forbes Forbes Campbell & Co. Ltd., will be bought out by the Government. The new railway will pass through Shahadkote, Garhi Khairo, Ushda, and Mouladad, and will also be worked by the N.W.R. It taps a rich wheat-growing area developed by the great Lloyd Barrage scheme—in which the Indus is dammed at Sukkur—and will give direct outlet from it to the port of Karachi without transhipment due to break of gauge at present necessary; the narrow gauge line is worked by the N.W.R. on behalf of the owning company.

### CZECHOSLOVAKIA

#### The State Railways in 1937

For the first time since 1929, the State Railways showed a surplus of receipts over expenditure in 1937, this surplus amounting to Kc. 79½ million as compared with a deficit of Kc. 401¼ million in 1936. The figures for the two years were:—

	1937 Kc.	1936 Kc.
Receipts ...	4,308,441,216	3,576,025,256
Expenditure ...	4,228,648,373	3,977,280,791
Balance ...	+ 79,792,843	- 401,255,535

During 1937 over Kc. 570 million were spent on productive investment; Kc. 95.4 million were expended on the purchase of locomotives and rolling stock. Also, 27 km. of new railway were added to the route-length of the system, which has now become 13,296 km. (about 8,250 miles). [As so large a percentage of this mileage is in Sudeten areas, the State system will be left with a much smaller mileage at the end of this year.—Ed. R.G.]

### EIRE

#### Brighter Stations in 1938

The Great Southern Railways have continued their scheme for the improvement of stations, and prizes and certificates of merit were presented at Kingsbridge, Dublin, by Sir Walter Nugent, Bart., Chairman, to the prize winning stationmasters on October 6. The Chairman said that one of the most gratifying features of the competition was the fact that some of the

prize-winners were on the list for the second time, and that members of the travelling public, including visitors from abroad, had paid tribute to the result of their continued industry and good taste. The standard obtained at many stations this year was so high that the directors felt that some token of approval should be given to those whose places fell short of the prize marks by only a point or two, and in such instances special certificates have been forwarded to the stationmasters concerned in each of the seven areas, into which the system was divided for the purpose of the scheme. In this way, eight stations in each area received recognition, five being awarded prizes and three certificates.

## CHINA

### Resumption of Shanghai Traffic

The Shanghai—Hangchow Railway was reopened for goods traffic on August 1. For this purpose a considerable quantity of goods stock was drafted from the Tientsin—Pukow Railway. The Hangchow line has been open for a limited carriage of public passengers for some little time, and the Shanghai—Nanking line is still available only for passenger traffic.

### Connection with Indo-China

A new railway is under construction from Kweilin, capital of Kwangsi Province, to the French Indo-China frontier, and work has so far advanced as to lead to the expectation of its completion by August, 1939. As the Hengchow—Kweilin line is now just being opened for traffic, there should be a through rail route from Haiphong via Hanoi and Nanning to Kweilin, Hengchow, and the Canton—Hankow Railway available within the next 12 months. This will form an important line of communications in South-West China.

## FRANCE

### Train Services Reduced

The National Railways Company or S.N.C.F. has reduced its main line train and railcar services for the winter season in order to effect economies required by the Minister of Public Works to aid in balancing the railway budget. The reorganisation has been carried out in a way that adapts the travel facilities to the winter demand, while making substantial savings. Certain fast "rapides" and express trains, as well as railcars, have been taken off, with a saving of about 6 per cent. in the mileage run. The corresponding changes in the timetables came into force on October 2. [Detailed on page 702.—ED. R.G.]

### Some Co-ordination Results

In regard to M. Jacquot's criticism of probable co-ordination results, to which reference was made in THE RAILWAY GAZETTE of October 7, *Transports*, in a further article, says the criticism may appear premature in the

light of actual statistics. The journal has obtained figures showing the estimated annual savings in the Department of Mayenne, where 205 km. (128 miles) of line have been closed to passenger traffic. The reduction of annual expenditure may be summarised as follows:—

1. Station and train working, 59 fewer employees .. ..	Fr. 1,360,000
2. Traction and office staff, 22 fewer employees .. ..	570,000
3. Reduction of 290,000 steam train-km. and 170,000 railcar-km. ..	1,600,000
4. Fuel savings .. ..	1,190,000
5. Permanent way savings, including 77 fewer employees and in material and level crossings ..	1,885,000
Total .. ..	6,605,000

The annual loss of traffic is 150,000 passengers, and loss of receipts is estimated at 600,000 fr. But account must be taken of the fact that the co-ordination plan for the Department also suppresses 220,000 km. of bus traffic daily, the passengers returning to the railways. Hence the loss of receipts is reduced, and the annual saving in this Department exceeds 6,000,000 fr., or about 30,000 fr. a kilometre of line closed. Figures are also to be issued for other Departments, when available.

## NEW SOUTH WALES

### Railways' Successful Year

The New South Wales Government Railways administration has again the satisfaction of announcing a surplus in the railway accounts. For the year ended June 30 last a profit of £51,469 resulted after payment of working expenses and all statutory charges. Earnings were £19,486,116, the highest figure since 1929, when the record sum of £19,615,616 was received. Had fares and freights not been reduced from time to time since 1933, the revenue would undoubtedly have exceeded the 1929 results. The operating ratio was 70.61 and the return on capital invested £3 18s. 5d. per cent. For the first time in New South Wales railway history a sinking fund charge was imposed and successfully financed from revenue.

The number of passengers carried totalled 189,349,298 or over 11,000,000 above the previous all-time record. Suburban journeys exceeded those of the previous year by 6 per cent. and country travel by 12 per cent. Considering the comparatively low price of motorcars, their low running costs, and the improvement in road surfaces, the increase in country travel is particularly heartening. The better results are largely traceable to two factors (a) the State's 150th anniversary celebration, and (b) the institution of more and cheaper services. Throughout the whole of the concluding half year "anywhere to anywhere" tickets at single fare and one third were available. Actually this has been equivalent to a 33½ per cent. general reduction in fares. Coaching revenue increased from £6,432,885 to £6,843,983.

Tonnage of goods traffic compared

with the previous year rose from 14,684,885 to 16,480,379, and revenue therefrom advanced from £9,704,734 to £10,830,839.

## PHILIPPINE ISLANDS

### The Manila Railway

The principal railway in these islands is the Government-owned Manila Railroad Company, which serves the main island of Luzon. This concern, after working at a loss for three successive years, showed a net profit of P.875,000 (£87,500 approximately) in 1937. In spite of the fact that earnings totalled P.8,569,000, an increase of 21 per cent. over 1936, working expenses were only 2 per cent. higher than in that year, and totalled P.6,097,000, this improvement having been attained by greater general efficiency and by a wider use of railcars. This railway has shared, equally with the Government, profits from the Government-owned piers at Manila since May, 1937, the operation of the subsidiary Manila Port Terminal Company being now undertaken by the railway. The income derived from this source amounted to P.140,000 as the railway share. The total freight carried in 1937 was 1,565,000 tons, an increase of 24 per cent. over the 1936 figure. The link in the Manila—Legaspi line was completed early in 1938, and through traffic established; this should improve 1938 revenues appreciably. The route-mileage open at the end of 1937 was about 725 miles.

### Passenger Facilities on this System

In spite of remarkably low passenger fares on this system, some of the trains are air-conditioned, and the fares charged on these are only slightly higher than the ordinary first class. Sleeping berths are available on payment of a supplement of about 5s. No charge is made for reservation of accommodation, but a fee of 5 per cent. is payable if reserved seats or berths in air-conditioned carriages are not occupied. Meals on trains cost approximately 1s. 6d. for breakfast, 2s. for luncheon, and 3s. for dinner.

### The Philippine Railway

The only other railways in these islands are owned by the Philippine Railway Company, which, when its bonds matured in June, 1937, showed a deficit of P.10,319,528. As the Government had invested over P.15,000,000 in this company, the latter was placed by the Supreme Court under a receivership. A report of the receiver shows that in the first half-year's working under them, the deficit was reduced to P.10,200,444. The railways owned by this company are in the islands of Panay, Negros, and Cebu and total some 130 route miles of line. Most of the above information is extracted from the Department of Overseas Trade "Report on the Economic and Commercial Conditions in the Philippine Islands" for June, 1938.



## RESIGNALLING THE APPROACH TO VICTORIA, SOUTHERN RAILWAY

*Completion of the first stage of a comprehensive scheme for resignalling the terminus*

*(See illustrations on pages 682-3)*

ONE by one the many London termini of the Southern Railway have been equipped with colour-light signalling and all-electric point operation, until at the present time only Victoria remains to be completed. In the early hours of Sunday, October 16, however, the first stage in this final big changeover was brought successfully into operation. As at Waterloo the approach lines to the terminus have been dealt with first, and the new signalling put into commission last weekend covers the section of line between the existing up home and down advance signals at Victoria and Pouparts Junction, a little over two miles out. The accompanying plan shows the new arrangements, which conform in general to the well established practice of the Southern Railway. Although this stage represents a comparatively small part of the complete Victoria scheme it includes many interesting arrangements, and should assist greatly in the safe and expeditious handling of traffic over this very busy section of line.

### Abolition of Block Working

This stage concerns only the former L.B. & S.C. approach lines. All block working is abolished between Victoria South box and Pouparts Junction, Factory Junction (on the South London line) and Stewarts Lane. These sections are equipped throughout with track circuiting, up to Victoria South home signals. The existing train describing arrangements are retained at this stage, but emergency bell block has been provided between the boxes mentioned. Certain of the arrangements between Battersea Park Junction and Victoria are temporary pending the completion of the whole scheme, but between Battersea Park Junction and Pouparts Junction the new signalling is permanent. The lines formerly designated main have been renamed through lines as far out as Pouparts Junction.

The up starting signals at Pouparts Junction remain as mechanically worked semaphores, but they are track circuit controlled instead of by Sykes lock and block; the former lower distant arms are now replaced by three-aspect colour-light signals leading up to the four-aspect colour-light signals in the resignalled area. On the up roads the four-aspect signals are spaced roughly 440 yd. apart, thus permitting of a very short headway between successive trains. The first of this series passed by incoming trains, HC 1/2, requires special mention. Mounted alongside the four-aspect running signal is a single-aspect low speed signal; this relates to the turnout via crossover 12 into the carriage road. Normally signal HC 1 shows no light, but for empty stock movements a yellow is exhibited, the main signal remaining at red. By this arrangement the virtual effect of a splitting signal is obtained but without the disadvantage of a red light having to be passed by a passenger train at speed; a red light is passed only in the course of a slow speed movement into the carriage road by an empty stock train. This arrangement has already been in use for a time on the Waterloo—Hampton Court Junction section.

### Battersea Park Junction

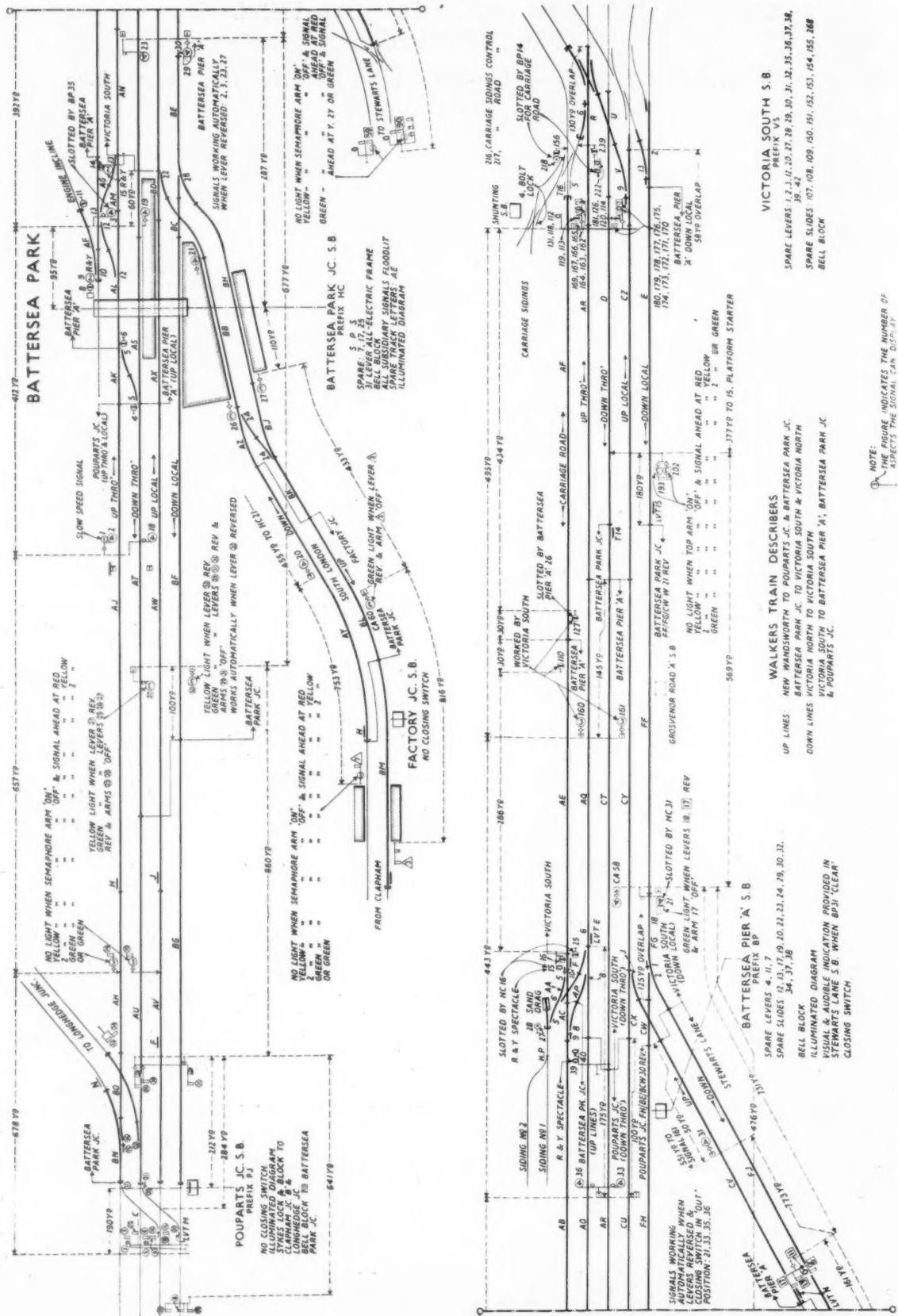
At Battersea Park Junction a new 31-lever all-electric locking frame has been installed in the existing signal box; this new frame is placed at the right hand end, and

at right angles to the existing frame, which is of the Sykes electro-mechanical type with slides for the signals. The new all-electric interlocking embodies all the standard practice of the Southern Railway, including 4-aspect colour-light running signals, power operated points, solenoid operated subsidiary signals (coloured bar type) floodlighted at night, and in conjunction with the down slow home signal HC 30 a position-light junction indicator reading to the South London line. A new feature is here introduced by the provision of "F" lights, signifying FREE, for the subsidiary signals on the indication panel of the power frame. The illuminated diagram, and also those in Pouparts Junction and Battersea Pier "A" Signal boxes have two red lights per track circuit; these lights are illuminated when the track circuits concerned are occupied. An arrangement that should lessen considerably the work of the signalman concerns the home and starting signals on the up through line and the home signal on the down through line; for a considerable period of the day no shunting movements occur over the turnouts connected with these two roads, and it is arranged that when the signal levers concerned, Nos. 2, 3, and 23 are reversed the three signals work as automatics.

### Battersea Pier

In Battersea Pier "A" signal box the existing Sykes electro-mechanical frame is retained at this stage, although the box will eventually be abolished and the various signals and points worked from the new all-electric frame at Victoria now in course of installation. The new colour-light signals are worked from the existing Sykes slides, but at this stage the points and facing point locks remain mechanically worked. Miniature colour-light repeaters are mounted behind the slides operating the new signals, and an illuminated diagram is provided. The diverging line here leads to the goods depot and steam locomotive running sheds at Stewarts Lane; during the night no movements are scheduled to or from that line, and between the hours of approximately 11 p.m. to 6 a.m. Battersea Pier "A" signal box is switched out, and then the colour-light signals relating to the up through, and up and down local lines work automatically, that for the down through, not being controlled from any box, always works automatically. Grosvenor Road "A" signal box has been abolished, and in place new Victoria outer home colour-light signals, Nos. 160 and 161, have been installed in their final positions, though at this stage they are worked from the existing Victoria South signal box.

The power supply for the signalling in the area referred to in this article is taken at 220 volts, 75 cycles from a new kiosk at Victoria. The cable work is throughout in accordance with Southern Railway standard practice, all outside wiring being carried in pre-cast sectionalised concrete troughing. With the exception of the test inspection cases and some of the rail joint insulations which have been supplied by the W. R. Sykes Interlocking Signal Co. Ltd., the whole of the apparatus for the work described, including several large overhanging bracket signals has been manufactured by the Westinghouse Brake & Signal Co. Ltd. The scheme has been prepared and carried out by the staff of the Southern Railway Company's Chief Engineer, Mr. George Ellson, to whom we are indebted for facilities to describe the work.

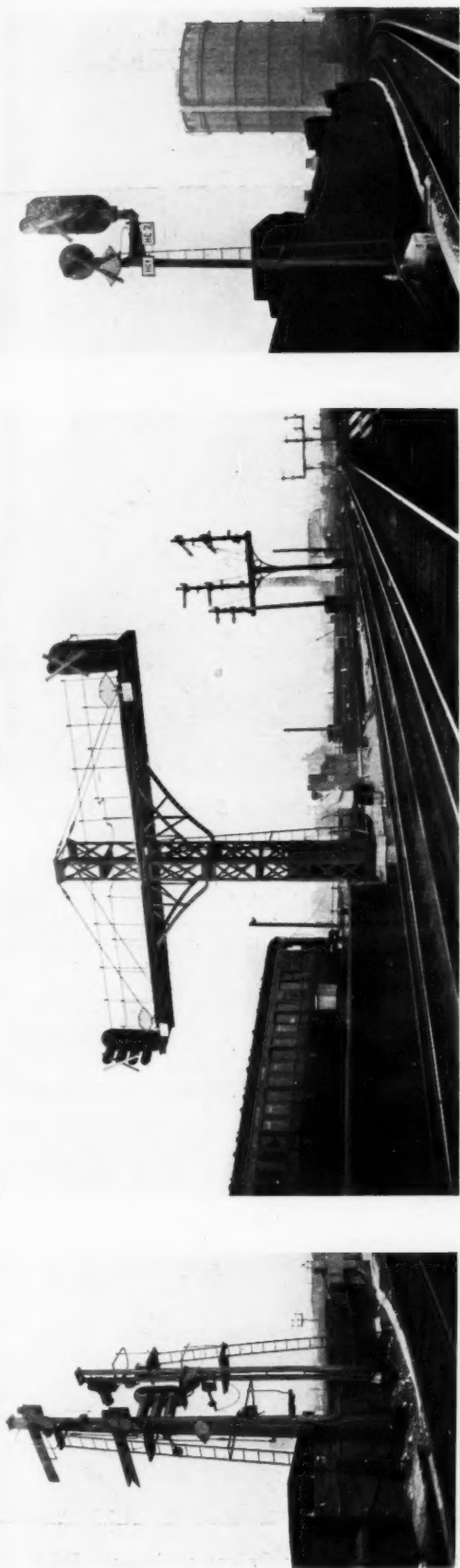


Arrangement of colour-light signalling between Victoria and Pouparts junction, Southern Railway (the former L.B.S.C.R. approach lines to the terminus) which was brought into use on Sunday last, October 16

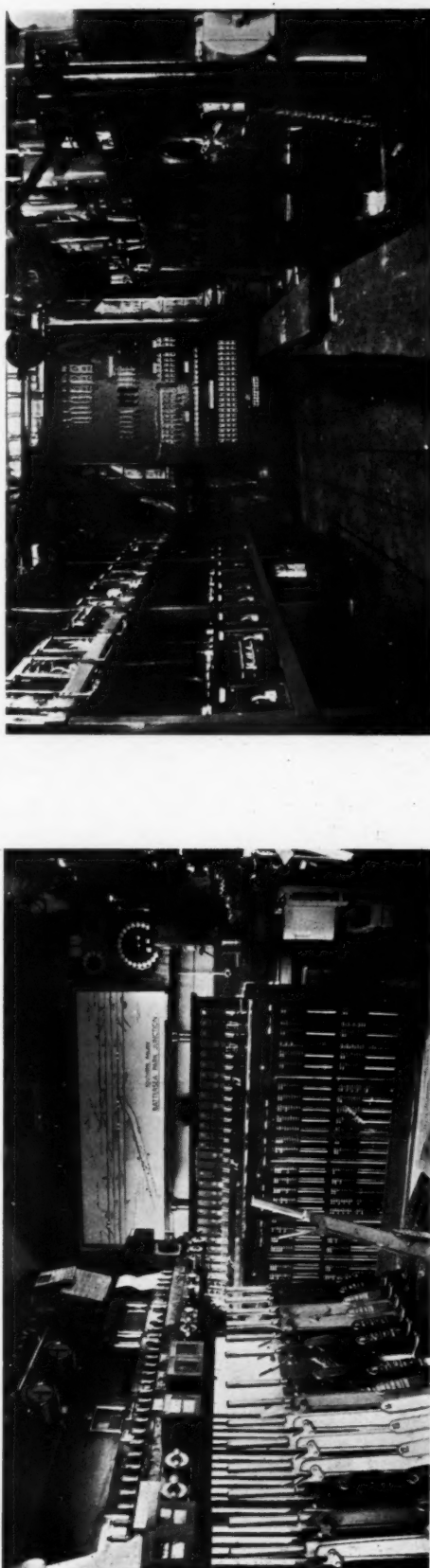
October 21, 1938

THE RAILWAY GAZETTE

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(Left): Pouparts Junction up fast starter; new post (made from two old rails) alongside, with upper-quadrant spectacle fitted and three-aspect colour-light repeater below; new semaphore arm, for mounting on opening night, ready at foot of post. (Centre): Battersea Pier up home signals BP 36 and BP 33, with existing semaphores in background. (Right): Signals HC 1 and 2—four-aspect main signal, with single aspect slow-speed signal alongside



(Left): Interior of Battersea Park Junction signal box, showing existing Sykes electro-mechanical frame on left, and new Westinghouse 31-lever all-electric locking frame and illuminated diagram. (Right): Pouparts Junction signal box showing adaptation work below existing L.B.S.C.-type mechanical locking frame. Electric locks and circuit breakers are coupled to lever tails. Note also new relays on left, and fuse board in centre background



## MACHINING LOCOMOTIVE DETAILS AT SWINDON WORKS—II

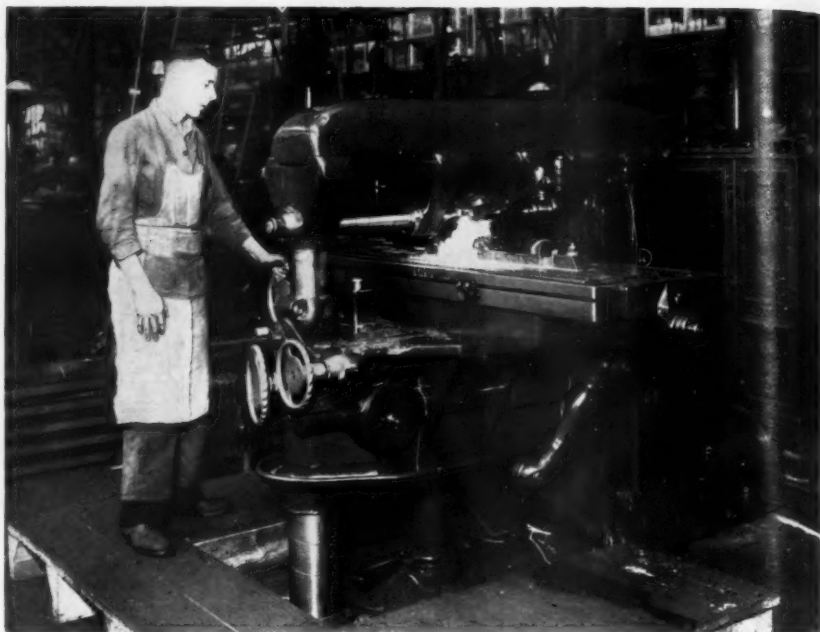
*Craven-Rigid milling machine used for a variety of operations in the locomotive machine shops*

THE Craven-Rigid milling machine illustrated\* is used with others of the same kind at the Swindon works of the Great Western Railway for milling locomotive parts. It is shown milling locomotive valve gear rolling washers of mild steel 32-37 tons tensile. The machine, which has a wide sphere of usefulness and is adapted for heavy as well as lighter work, is arranged for hand, power-feed and quick traverse motions in all directions, and is equipped with suitable trip dogs for controlling the different traverses. The outstanding feature of the machine is the elimination of universal joints from the main drive to the table traverses, the outer support to the knee slide and also the column base being cast in one piece. The powerful overarm, which is locked to the outer support by a bayonet joint, gives a very rigid support throughout the length of the cutter arbor, and the extra arbor brackets attached to the overarm as seen in the illustration allow for heavy cutting to take place without any spring, thus eliminating chatter.

All the driving gears are housed in the column. Sixteen changes of speed, from 15 to 450 r.p.m., are obtained through two small levers, so positioned that the speed of the spindle can be read direct. The knee casting forms the complete feed box, giving sixteen rates of feed varying

from  $\frac{7}{8}$  in. to 16½ in. in the transverse and vertical directions. The machine is driven by a 20-h.p. motor through Texropes on to the main friction clutch, which is operated by a lever at the side of the overarm. The base of the machine forms the water tank, the water being pumped up through strong piping to a suitable position to the cutter on the mandrel. The return of the water is from troughs around the table through a universal joint into the base of the column. These water connections are clearly shown on the illustration.

\* By courtesy of Mr. C. B. Collett, O.B.E., Chief Mechanical Engineer, Great Western Railway



*Craven-Rigid milling machine in use at Swindon works*



*Five Ransomes electric trucks recently delivered to the Great Western Railway for use at Swansea docks*

## THE LATE SIR HENRY FOWLER, K.B.E.

WE regret to record the death, at Spondon Hall, Derby, on October 16, at the age of 68, of Sir Henry Fowler, K.B.E., formerly Chief Mechanical Engineer, and later Assistant to the Vice-President for Works (Research & Development), London Midland & Scottish Railway. Sir Henry was born on July 29, 1870, educated at Evesham and at the Mason Science College, Birmingham, and served his apprenticeship at the Horwich works of the Lancashire & Yorkshire Railway. He was subsequently appointed an Assistant, then as Chief of the Testing Department, and finally as Gas Engineer on the L. & Y.R. Whilst at Horwich he was associated with the Railway Mechanics' Institute, first as a student—gaining the first Whitworth Exhibition awarded to a member—and afterwards as a teacher. He was also connected with the experiments on train resistance on which Sir John Aspinall based the classic paper which gained him the Watt Gold Medal (1901-2) of the Institution of Civil Engineers. In 1900, Mr. Fowler left the L. & Y. to take up the position of Gas Engineer on the Midland Railway, and in 1905 was appointed Assistant, and in 1907 Works Manager, Derby. In the last-named year he visited America and there gained much valuable experience in railway and mechanical matters. In 1909 he was promoted to be Chief Mechanical Engineer of the Midland Railway, a position he occupied until the amalgamation in 1923.

During the war he was appointed Director of Production, Ministry of Munitions, 1915; Superintendent of the Royal Aircraft Factory, 1916; Assistant Director-General of Aircraft Production, Ministry of Munitions, 1917; and held various other appointments under that ministry, 1918-19. For his services he was created C.B.E. in 1917 and K.B.E. in 1918. In 1923 Sir Henry was appointed Deputy Chief Mechanical Engineer, L.M.S.R., and Mechanical Engineer, Midland Division. In 1925 he was appointed Chief Mechanical Engineer, L.M.S.R., a post he held until the end of 1930, when he became Assistant to the Vice-President for Works (Research and Development), with effect from January 1, 1931.

Sir Henry was made a full member of the Institution of Civil Engineers in 1918 and also subsequently a Member of Council of the institution. For papers read before the institution he was awarded the Miller Prize, the Telford Premium, the Watt Medal, and the Webb Prize.

In 1922 he collaborated with Sir Nigel (then Mr.) Gresley in presenting a paper to that institution describing the results of brake trials with long goods trains on the G.N.R. He was a President of the Institutions of Mechanical Engineers (1927), Locomotive Engineers (1912-14), Automobile Engineers (1920-21), of the University of Birmingham Engineering Society (1912-14), of

the Engineering Section of the British Association for the Advancement of Science (1923), and the Institute of Metals (1932). He was also a Member of the Institute of Transport, and was awarded the Railway Engineering Gold Medal by the Council of that institute (1929-30). He was a member of the Permanent Commission of the International Railway Congress Association, and was a Reporter at the Cairo Session in 1933.

Sir Henry retired from the position of Assistant to the Vice-President for Works, L.M.S.R., in 1933. In the next year he was elected by the Minister of Transport to be Chairman of a committee to investigate the question of noise in connection with mechanically-propelled road vehicles. Sir Henry was appointed Forrest Lecturer, Institution of Civil Engineers, in 1934. He held the honorary degree of LL.D. from the University of Birmingham, and of D.Sc. from the University of Manchester, and he was the first honorary graduate of the Manchester College of Technology.

As a locomotive engineer, Sir Henry Fowler had scope for his originality from the first in the peculiar conditions governing the locomotive

department of the Midland Railway. Heavy axle-loads were for the most part precluded, so the problem was mainly that of securing more and better work from relatively light engines; in such circumstances high boiler efficiency is imperative, and boiler design was indeed Sir Henry Fowler's primary interest in locomotive practice throughout his career. Even Derby was not without its occasional demands for a heavier and more powerful design for a special sphere of duty, and that such requirements were met with originality during Sir Henry's career is demonstrated by the four-cylinder 10-coupled banking engine built at Derby for the Lickey incline. While at Derby Sir Henry Fowler was responsible for the building of further three-cylinder compounds based on Mr. Johnson's original design, and also initiated the construction of the well-known M.R. 0-6-4 passenger



*The late Sir Henry Fowler, K.B.E.*

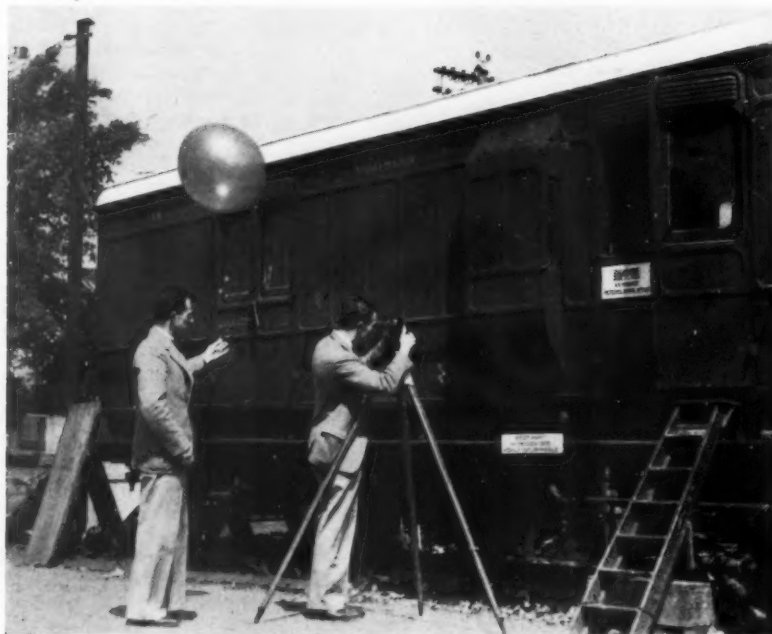
Chief Mechanical Engineer, Midland Railway, 1909-23;  
Chief Mechanical Engineer, L.M.S.R., 1925-30;  
Assistant to Vice-President for Works (Research and  
Development), L.M.S.R., 1931-33

tanks and the 0-6-0 goods engines with Belpaire fireboxes now designated L.M.S.R. Class "4F."

In 1927, two years after becoming Chief Mechanical Engineer of the L.M.S.R., Sir Henry Fowler placed in service the first of the three-cylinder "Royal Scot" class 4-6-0 locomotives, the design of which was called forth by the demand for engines of greater power than the "Claughtons" on the Western Division. He was also

responsible for the rebuilding of some of the "Claughtons" to the type now known as the "Patriot" class, forming a design to which numbers of new engines have since been built. Moreover, his period at Crewe was marked by a large amount of rebuilding of older engines to bring them into conformity with L.M.S.R. requirements regarding power and standardisation of parts.

(See also editorial article on page 674)



*Above: Hawkesbury River bridge, New South Wales Government Railways, part of the link across the Brooklyn-Mullet creek completed on May 1, 1889, to connect the portions of the N.S.W. railway system based respectively on Newcastle and on Sydney. The bridge spans the 3,000-ft. main channel between the north shore of the river and Long Island, whence connection is made with the south shore by a causeway*

(See editorial note on page 672)

*Left: In a siding at Imperial Airways Empire terminal at Hythe, Hampshire, this old railway coach has found a new lease of life as a temporary Air Ministry meteorological office, providing weather data for the Imperial flying boats as they come in to and leave Southampton*



## ROAD TRANSPORT SECTION

*This section appears at four-weekly intervals*

### Open-Air Bus Garaging

ON another page we record some details of the extensive work which the London Passenger Transport Board has in hand for extending its garage accommodation to meet the requirements of the large-type bus now in use, and to provide facilities at points best suited to traffic requirements. One of the most interesting features of the programme is the adoption of open-air garaging, a practice not hitherto used by London Transport. This is at Hornchurch garage where an extension to accommodate 50 more buses has been provided at a cost of £26,000 on an unroofed concrete courtyard of some 20,000 sq. ft. In cold weather the vehicles parked here will be connected by rubber tubing to a steam-pipe installation, so that steam will percolate through the water in the radiators and keep the engines warm and ready to start easily. Outdoor bus storage in other parts of the world liable to severe winter conditions is not unknown, and a notable example was provided as long ago as 1931 by the Brooklyn Bus Corporation, a subsidiary of the Brooklyn & Queens Transit Corporation. Experiments during the winter of 1930-31 with 39 buses had proved so satisfactory that, when the company found it necessary to provide for the storage without delay of 270 additional vehicles, it decided to extend the arrangement. Briefly, it consisted in installing electric heater units on the engines and transmissions of the buses and erecting an overhead system to distribute the current. The following table indicates the schedule of heater for various temperatures:—

Temperature	When to plug in heater
45 degrees ..	No heat needed.
38 to 45 degrees ..	One hour before leaving.
32 to 38 degrees ..	Two hours before leaving.
25 to 32 degrees ..	Three hours before leaving.
25 degrees or less ..	As soon as bus is parked for the night.

To supplement the electric heating, it was also found necessary to use an anti-freeze solution in the radiators during the most severe weather.

### Railway Motor Services in Sweden

FOR some years past the Swedish State Railways have been taking over small privately-owned buses in Sweden in much the same way that the State administration has been absorbing privately-owned railway lines, and it is felt that the time is not far distant when the Swedish State Railways will own all railways in Sweden and all bus services with the exception of those operated by the Post Office. In our issue of September 23, we described briefly the road undertakings of both the State Railways and the Post Office, and we are now able to amplify the particulars then given by some statistics for 1937 recently issued in Stockholm. Incidentally, it will be seen from these that, despite the process of absorption, private railways and their associated road services still constitute an important section of Swedish transport facilities. Moreover, the number of motor services operated by the various Swedish administrations is still increasing considerably, as the private railways as well as the State administration are acquiring the businesses of independent road operators. Preliminary figures for last year recently issued in Stockholm show that the

total length of railway-owned motor routes was 16,016 km. (9,952 miles) or nearly the same as that of the railway lines, an increase of 3,571 km. (2,219 miles) on 1936 or nearly 29 per cent. The increase was 79.5 per cent. for the State Railways, 8.5 per cent. for routes belonging to the private railways, and 55.2 per cent. for routes belonging to road transport companies affiliated to private railways. The mileage is composed chiefly of passenger bus services. The total distance travelled by such buses in 1937 was 41,100,000 km. (25,538,000 miles), and by lorries 1,600,000 km. (994,000 miles). At the beginning of 1938 the railway-owned buses and coaches for passenger transport numbered 1,081, with a total of 31,763 seats, and the 235 railway-owned lorries had a total loading capacity of 630 tons. The earnings on the motor services owned by the State and private railways were Kr. 9,320,000 for 1937 compared with Kr. 7,010,000 for 1936. Earnings and expenditure increased by 33 and 35.5 per cent. respectively. The capital invested in railway motor services was Kr. 14,520,000, of which Kr. 6,710,000 was for State Railway services, and Kr. 7,810,000 for services owned by the private railways. The railways also collaborate in the maintenance of other motor services covering about 10,000 km. (6,200 miles) of route.

### Road Transport and Defence

AT an early stage of the recent crisis in international affairs, the Minister of Transport announced his plans for making the most efficient use of road goods transport in Great Britain in the event of a national emergency arising. These included the appointment of the Defence (Road Transport) Committee consisting of Sir James Milne (for the railway companies), Mr. W. J. Elliott of Pickfords Limited (for the railway-associated road haulage companies), three of the leading men in the road haulage industry, and Mr. Ernest Bevin representing labour interests. The essence of the plans was to make the maximum use of the experience and ability of men of goodwill in the industry. For this purpose the boundaries of the present traffic commissioners' areas were modified to accord with the plans of the Food Defence and Air Raid Precautions Departments, and regional advisory committees were appointed in each of these areas under the Chairman of the appropriate traffic commissioners for the district. Every area was again sub-divided into a number of districts, to each of which was assigned an officer of the traffic commissioners' staff who was styled the District Transport Officer. This officer was the executive officer of a District Transport Committee, and it was intended that he should bear the main responsibility for disposing of the available road transport in his district to the best national advantage. It was realised, however, that he could not possibly keep in day-to-day touch with the one or two-vehicle men in his district and it was proposed to encourage operators to make temporary working groups or voluntary combinations under a group manager chosen by themselves.

The schemes provided for a "cautionary" stage in which the district committees would act by way of advice and assistance, but in certain circumstances and in cer-

tain districts it might have been necessary to switch over rapidly to a second stage, termed "permit working," under which full use would be made of any powers granted to the Minister of Transport to prohibit the use of any vehicles unless they were used in accordance with the conditions of a permit given by the District Transport Officer upon the advice of the District Transport Committee. The district officers were instructed to take all possible steps to avoid interference with vehicles fully utilised on essential services under the Food Defence organisation. The plans which the Minister proposed were not intended to function until a national emergency arose, and, therefore, although the district officers were appointed, they did not proceed to their districts. Obviously the time in which the present scheme was arranged was too short to permit it to function satisfactorily throughout and the Minister has since announced that the advisory committee is now proceeding to review the whole of the arrangements for the purpose of considering whether any alterations or modifications of the scheme are desirable in the light of experience.

### German Motorbus Services

IN Germany the Reichsbahn and the Reichspost have for some years operated a number of motorbus services jointly, and, although in general this arrangement has given satisfaction, the question of dividing the work has often been discussed. Negotiations were opened in 1937 between the two departments with a view to dividing the 114 jointly-owned lines existing under the terms of a former agreement, and a plan was drawn up by the two administrations to distribute, as fairly as possible, those lines which came under the contract. Accordingly, joint working ended on April 1, 1938, but the postal authorities will continue to work until May 15, 1940, the 47 lines assigned to the Reichsbahn. The extension of the *Autobahnen* has enabled the Reichsbahn to establish new bus connections on these thoroughfares, some of which link up with the ordinary road services. At the end of 1937 there were 60 Reichsbahn bus services, of which 33, representing a kilometrage of 3,809 (2,362 miles), were worked over sections of *Autobahn*. As the motor roads are extended it is expected that further regular routes will be opened. The Reichsbahn also undertakes a certain amount of private hire and excursion work with its service buses (all single deckers) so far as they are available. Fares on the Reichsbahn motor services are being standardised on the basis of the third class railway fares for ordinary fast trains (*Eilzüge*). The general motor service regulations and administrative principles are also being standardised.

### Reichsbahn Lorry Services

GOODS transport by lorry undertaken by the Reichsbahn during 1937 continued to be maintained partly by that organisation's own vehicles and partly by associated road enterprises. The measures taken in 1936 to organise these facilities were developed in response to the wishes of dispatchers, who demanded more deliveries direct from door to door; these affected chiefly the transport of full loads, and especially of such commodities as cereals, beetroots, and potatoes. At the end of the year, the Reichsbahn road motor fleet included 2,031 lorries and 1,207 trailers. Among the year's deliveries were lorries of 3, 5 and 6 tonnes loading capacity, and two-axled trailers of 10 and 11 tonnes. The system of transporting railway goods wagons on road trailers, begun in October, 1933, has made big strides. At the end of 1937 such vehicles were working in 27 centres, and in some areas traffic grew to such an extent that a second lorry

was necessary. Since the service was inaugurated it has transported 140,000 wagons by road, and new facilities of this type are in course of preparation. At the end of 1937, the fleet comprised 119 units, including 41 lorry and trailer units, three special lorries, two vehicles for heavy loads, seven lorries of 120/130 h.p., and one lorry-train of 120 h.p. with six wheels for very heavy goods. The heavy-vehicle fleet carried out in all 80 heavy transport jobs during 1937, of which a certain number came under the four-year plan and the construction of the *Autobahnen*. It also undertook the long-distance transport of several consignments which were too heavy for conveyance by railway.

### The Importance of Paint Weight

BUILDERS of double-deck bus bodies are still finding it difficult to keep the weight of the laden machine down to 10½ tons, and in some cases the margin is so fine that even the weight of the paint is a matter for careful consideration. Naturally the multitudinous varieties of paint differ greatly in weight and consistency, but generally speaking every coat of a double-decker takes about ¾ gal. White is one of the heaviest materials to use and a gallon of white undercoating weighs from 18 to 20 lb., in contrast to 15 to 17 lb. a gal. of black paint. In addition, it is usually necessary to use at least one more coat of white than of black. Bright red is another light colour. All these are "wet" weights; the dry weight is usually about one-third less. In this connection some interesting figures have been compiled recently by the bodywork department of Leyland Motors Limited, and the following estimate has been made of the average weight of paint on a complete Leyland double-decker:—

Two coats chassis paint, using (say) ¾ gal.	
at 12 lb. a gal. . . . .	3 lb.
Three coats for structural portion of body,	
using 3 gal. at (say) 13-14 lb. a gal. . . .	40 lb.
Six finishing coats (including varnish) using	
(say) 5 gal. at about 13 lb. average a	
gal. . . . .	65 lb.
Wet weight . . . . .	108 lb.

This gives a dry weight of 72 lb., which is more than enough to have an important effect on the total laden weight of a vehicle that is being built within fine limits.

### The Training of Motor Drivers

CONSIDERABLE care is taken by the British railway companies in training the drivers of their motor delivery vans and motor lorries. As briefly recorded on page 229 of our issue of July 29 last, to ensure new entrants to the ranks of motor drivers being thoroughly efficient, a training school for road motor drivers is being laid out by the G.W.R. near Taplow station. The school will consist of a classroom for instructional purposes, a garage, and a system of roadways which will include a specially-prepared skidding patch, various types of road junctions for turning and backing, gradients, portable lights, and road signs, so that drivers will be accustomed to their use before going on the public highway. Permanent instructors will be in charge of the school to superintend the practical and theoretical sides of the training and to give lectures on road sense, avoidance of accidents, how to correct skids, start on a hill, apply brakes correctly, the care of vehicles and complete understanding of the Highway Code. The classroom will be fitted out with road signs, charts, and diagrams, whilst a stripped chassis and sectional units will enable drivers to understand the fundamental working of all parts of the vehicles.

Instruction will be given in the use of commercial vehicles, light and heavy motorcars and articulated lorries. It is expected that 150 to 200 drivers recruited from the company's staff in London, the Birmingham and Midlands area, and parts of the west of England will pass through the school annually. Prospective drivers of road motor vehicles operated by the L.M.S.R. also attend training schools, which have been established at Watford, Sutton Park, Oldham, and Cleckheaton, where they are taught by means of lectures and practical demonstrations the principles of the Highway Code and safety first, good road manners, the manipulation of controls, and the economical and efficient management of motor vehicles. Practical training is also given on actual vehicles on an outdoor training ground attached to the schools. Every year some 600 drivers are trained. An illustrated article dealing with these schools appeared in our issue of July 30, 1937. A similar school is run by the Southern Railway at Clapham Junction. In addition, lectures are given by the company's road traffic experts at various centres in the south of England.

### Proposed "No-Waiting" Regulations

THE present practice in London of leaving vehicles standing at the side of the street is generally recognised as one of the principal causes of congestion, and formal notice has now been given by the Minister of Transport of his intention to attack the problem. To this end he has drafted "no-waiting" regulations which, as announced in Parliament on June 17, are proposed to be applied for an experimental period to main thoroughfares in Central London north of the Thames but excluding the City of London. Within the area bounded by Hammersmith in the west, Euston Road on the north, and Shoreditch High Street in the east, it is intended to apply the "no-waiting" rule to 104 streets (including thoroughfares in the Piccadilly Circus, Oxford Street, and Wigmore Street areas, already restricted), as well as to all side streets for a distance of 120 ft. (subject to variation in specific cases) from their junctions with the main restricted streets. During the prescribed hours passenger vehicles will be permitted to stop in the streets affected only long enough for persons to board or alight and load or unload personal luggage; goods vehicles will be allowed to wait only while delivering or collecting goods or being loaded or unloaded and even then for not more than twenty minutes. The prescribed hours are 12 noon to 7 p.m. on Mondays to Fridays, and 12 noon to 3 p.m. on Saturdays. Certain classes of vehicles will be exempt from the regulations, namely, (a) vehicles being used in connection with the removal of furniture or building operations; (b) fire engines, ambulances, and police and local authority vehicles being used as a matter of urgent necessity; and (c) taxicabs waiting on authorised cab ranks.

The restrictions on the delivery of beer and fuel such as coal, coke, and hydro-carbon oils, now in operation between 10 a.m. and 6 p.m. in a number of streets in the central area, will be extended to all streets covered by the "no-waiting" regulations. The proposed penalty for a breach of any of the regulations—unless the person concerned is acting on the direction or with the permission of a police officer in uniform—will be a fine not exceeding £5. For the convenience of drivers affected by the waiting restrictions in main thoroughfares, the Minister proposes to appoint 54 additional parking places in side streets and also to increase the capacity of four existing parking places. The time-limit for both the existing and the proposed parking places will be one hour of use. The inadequacy of the road system in many parts of London is fully recognised and it is not intended that the

proposed "no-waiting" regulations should be used to postpone early consideration of works of street improvement.

### Detachable-Roof Double-Deckers

BEFORE the introduction of covered-top double-deck buses, operators found that the open top was popular in summer but unremunerative in winter. A few experiments were made with the object of removing the staircase and top-deck gear for the winter months, and in Toronto—where weather conditions are severe—the idea was, we believe, adopted extensively. In general, however, the open-top double-decker remained in use all the year round, and passengers were merely provided with waterproof aprons. When the covered-top bus became a practical proposition, the open-top variety went out of use, and passengers found themselves deprived of a fine-weather pleasure. In special cases the open-top bus has been reintroduced for such services as the popular sea-front route of the Brighton, Hove & District Omnibus Co. Ltd.; and some operators have tried to meet all requirements by adopting roll-back "sunshine" roofs on the upper deck.

So far the most promising attempt at securing the best of both worlds is that which is being made by Crosville Motor Services Limited on the North Wales coast. During the past summer this company has been operating at Rhyl and Llandudno six Leyland Titan double-deckers with tops that can be removed in one hour. The vehicles can thus be used at will with open tops or close tops. Eastern Coachworks Limited built the bodies. When the top is in position on one of these vehicles, it has the appearance of an orthodox double-deck bus. The principal structural difference is that the main pillars extend only to the upper waist line. The waist rail itself is in two parts, and the upper half comes away with the detachable top. This top comprises the roof, the pillars above the upper waistline, the top half of the waist rail, and the upper deck windows. Twelve captive bolts secure the halves of the waist rail. When the top is off, the same captive bolts are used to secure a double guardrail above the waistline. The detachable portion has a self-contained wiring system for electric lighting, and a junction box is provided at the front of the bus for easy connection. Special waterproof leather is used for the upholstery of the upper-deck seats.

Before removing the top, four lifting eyes are bolted to the cant rail, and tubular struts to brace the cant rail are led from alternate pillars to the waist rail on the opposite side of the bus. This bracing prevents distortion while the tops are stored. To guard against distortion while the tops are being lifted off, the chain blocks are not secured direct to the lifting eyes, but to a timber cradle with four hooks.

### Convertible Horizontal Engine

THE Büssing-N.A.G. organisation is now installing a six-cylinder single-bank horizontal oil engine in many of its chassis. It develops 150 b.h.p. at 1,800 r.p.m. in cylinders 135 mm. by 160 mm., and weighs 2,375 lb. with attached auxiliaries. Particular attention has been paid to making this engine convertible as easily as possible into the standard petrol engine, and *vice versa*. The precombustion chamber in the oil engine cylinder head can be withdrawn and replaced by a sleeve in which is housed a sparking plug. A carburettor and manifold are attached in place of the air intake, and a magneto is substituted for the fuel oil pump. Finally, shorter pistons are fitted to give the necessary lower compression ratio.



## Servicing Fuel Pumps

*Special organisation for a fleet of more than 100 diesel buses*

*(See illustrations opposite)*

**C**OMPRESSION-IGNITION engines differ from petrol engines in a variety of ways, but from the servicing standpoint probably the most important departure lies in the possibilities for wear and derangement in the fuel metering equipment of the one type of engine that are entirely absent with engines of the alternative type. A carburettor is subject to blockage by dirt, but apart from this it is likely to remain in proper working adjustment over an indefinite period of time. This is not so with the little cam-actuated pumps and spring-loaded valves of the compression-ignition engine, for these are working parts in the sense that the pistons and connecting rods are working parts, and they undergo hard usage.

In the experience of the Devon General Omnibus & Touring Co. Ltd. considerable fuel saving is effected by giving regular attention to the fuel supply systems of commercial vehicles that are in constant use. Periodical removal of all parts for cleaning, checking, and readjusting, and their immediate replacement by overhauled parts, is the system employed. All dismantled parts are sent to a special service depot for reconditioning, and the same depot issues to the various garages replacement parts in special wrappings to exclude dirt. With 102 diesel engines in use, the company has found this thoroughgoing policy entirely practicable, although it has necessitated the provision of the specially-equipped depot already mentioned, and an organisation for co-ordinating its work with the routine work of the garages.

The weekly mileage of every vehicle is passed to headquarters from the garage which operates it, and, when certain predetermined totals are reached, instructions are issued to the garage to carry out the examinations or replacements that experience has shown to be advisable after these particular intervals. Thus, after every 4,000 miles

the engine lubricating oil is changed, and so also are the fuel nozzles together with the cloth fuel-oil filters. The latter are changed with cages complete, and the work of fitting new cloths to the cages is done at the central depot. Every month the fuel pumps are inspected, and at every dock—that is, after from 17,000 to 20,000 miles of service—they are removed for a thorough overhaul, which involves complete stripping, at the central depot.

The central depot is situated at Torquay, and its general arrangement suggests a laboratory rather than a repair shop. It is orderly and scrupulously clean, and has zinc-covered benches slightly tilted to ensure the drainage of oil spillings into gutters which run along the front. Dirty components are cleaned with paraffin in a corner arranged for their reception. The operatives have a supply of hot water and soap in another corner for their personal needs. A fifty-fifty mixture of white oil and paraffin is used for test purposes, this being less objectionable than fuel oil, but a further safeguard to the skin of operatives is a rule compelling these men to smear their hands with Rosalex before they begin any dirty work.

The correct timing and metering of the overhauled pumps is secured with the aid of a C.A.V.-Bosch fuel-injection equipment test-bench outfit which provides for rotation of the pump by an electric motor at any speed. Nozzles are tested by a Bosch hand tester, and the defect which is usually found after prolonged service is a weakening of the control spring, causing the nozzle to open under a pressure less than the standard 160 atmospheres. More than one-half of the engines operated by the company are of Leyland manufacture. A test with Leyland-built fuel nozzles extending over 19,000 miles of service showed that these had an unusual capacity for remaining in proper working condition.

## London Transport £226,000 Garage Programme

**A**T the present time the London Passenger Transport Board has in hand garage construction or reconstruction work to the value of approximately £226,000. The chief reasons for the work are the modernising of the bus fleet, which involves the adoption of a larger type bus as the board's standard vehicle, and the provision of garage accommodation at points best suited to traffic requirements. The new garage building at Alperton, for which a £40,000 contract was signed recently, will be ready by the spring of next year. This garage has been made necessary by the remarkable development of the district in recent years. It will house 83 buses and will have a floor space of 27,000 sq. ft. The population around Alperton has multiplied five times in the last sixteen years, namely, from 2,300 to 10,500. The garage programme includes two other new garages, one in Gillingham Street, Victoria, and the other at Edgware. The Gillingham Street garage, to cost £100,000, is now being built and will be ready by the summer of next year; it will have frontages in Gillingham Street and Wilton Road. There will be three floors—a basement with accommodation for 70 Green Line coaches, a ground floor to house 100 buses, and a first floor consisting of offices

and canteens. The existing garage at Edgware has to be demolished to make way for the rebuilding of Edgware station and other work associated with the extension of the railway to Aldenham and Bushey Heath. The new garage building being erected in its place will cost £14,000.

Other garages are being, or have just been, reconstructed and enlarged. The largest work is on the site of the former London General Omnibus Company's horse hospital in Well Street, Hackney, where the garage has been extended at a cost of £30,000 to hold double the number of buses it now serves. Work at the Hornchurch garage, at a cost of £6,000 consists of an extension comprising a concrete courtyard of some 20,000 sq. ft., providing room for 50 more buses. There is no roof, and this is the first time that the London Passenger Transport Board has tried parking buses in the open. In cold weather the radiators of the vehicles will be connected by rubber tubing to steam pipes so that steam can percolate through the water in the radiators, thus keeping the engines warm and ready to start easily at the beginning of traffic. We refer to this experiment in an editorial note on page 687. Plans are being prepared for the reconstruction of the board's garages at Leatherhead and High Wycombe.



*Devon General service depot for fuel pumps, Torquay*



*Another view inside the Torquay depot*

**SERVICING FUEL PUMPS** (See article opposite)

## Anything to Anywhere

*A brief survey of the efficient organisation evolved by the Southern Area of the London & North Eastern Railway for transporting abnormal loads*

By C. H. JAMES,

Cartage Manager's Office (Southern Area), Farringdon Street, L.N.E.R.\*

**D**URING recent years very far-reaching developments have been taking place in the Southern Area cartage organisation of the L.N.E.R. It is not proposed to burden this article with the mass of facts and figures which could be produced to show what has been done, but the following brief outline is indicative of progress made.

of the changes which the years have brought, since, whereas in 1928 activities were practically confined to restricted cartage boundaries around stations, by the end of 1937 a regular collection and delivery service was being given to hundreds of outlying villages which, in 1928, had to rely upon such service as was given by the local carrier, coal merchant, general store-keeper, or whoever happened to make sporadic visits to the station. Only by the substitution of mechanical transport for the valiant but physically limited horse has it been possible to build up a service in the far-flung radius now covered as a part of the normal day's schedule.

Side by side with the services for packages of normal weights and dimensions, an organisation to cater for the abnormal has been brought into being, until today, in the Southern Area, a collection and delivery service can be given to any piece up to 80 tons in weight which can be carried by rail. Nor is a collection and delivery service all that can be given, since, not only are such pieces brought away from or taken to customers' premises, but gangs are engaged regularly in unseating—often including a measure of dismantling—prior to loading (by hand equipment) on to the road vehicle, or, in the reverse direction, unloading (by hand equipment) from the road vehicle, and placing boilers, tanks, machines, and so forth, over prepared foundations or on prepared seats, lined and levelled up to the exacting requirements of customers. Two gangs, each with its complete set consisting of heavy-duty winch-fitted tractor, trailer, jacks, rolling gear, timber-packing, and other tackle, are regularly at work, and the organisation is sufficiently fluid to permit of a third gang, with equipment suitable for the smaller jobs, being worked.

Often some rather remarkable work is involved, as the following brief details of jobs which actually have been done during recent months serve to illustrate. A rotary drier came over from the Continent, *via* the train ferry, in three sections, each about 18 ft. long, 9 ft. 6 in. in diameter, and weighing 14 tons, together with 25 tons of smaller parts. The sections were hauled about 2 miles to the consignee's premises, where they were unloaded



*Haulage of a 30,000-kW. stator at Brighton by the L.N.E.R. on behalf of the Southern Railway. The load (70 tons) is being carried on the girders belonging to a 70-ton transformer wagon imposed upon the swivelling bolsters of the heavy twin trailers. Loading and unloading was carried out by hand equipment*

At the end of 1928 the cartage equipment of the area was:—

4,016 horses ;  
6,059 horse-drawn vehicles ;  
456 motor vehicles.

At the end of 1937 this had been transformed into:—

1,420 horses ;  
2,716 horse-drawn vehicles ;  
2,434 motor vehicles.

In 1928, over 350 separate carting agents were employed, but by the end of 1937 this number had been reduced to 52, L.N.E.R. motors having taken over the work formerly covered by the 300 displaced. The comparative traffic figures are:—

	Year 1928		Year 1937	
	Goods Tons	Parcels No.	Goods Tons	Parcels No.
By horses ..	3,054,069	11,680,048	1,000,178	5,617,701
By motors ..	713,171	3,557,109	3,222,769	31,353,156
By agents ..	253,509	2,089,021	26,745	313,796

It is impossible, however, to give a complete picture

\* Reproduced from the L.N.E.R. Magazine by courtesy of its Editor



(by hand equipment) on to timber packing, bolted together, and fitted with various parts until a cylinder 51 ft. long by 9 ft. 6 in. in diameter and weighing about 55 tons had been built up. The cylinder was jacked up to a height of 13 ft. from the ground and then moved laterally until the geared end was placed inside an aperture left in a brick-built housing, and connected with the power drive. In the meantime, certain bearings were placed on prepared plinths, and when the cylinder was finally in position and the power switched on, it was found that the whole thing had been carried out so successfully that the drier rotated perfectly without further adjustment, much to the satisfaction of the maker's representative, who had come over from Holland to watch the erection.

A job of another kind was in connection with a girder 86 ft. long by 7 ft. wide by 2 ft. deep, weighing 45 tons, which was hauled through one of the large towns to a new cinema building. The peculiar requirements at the delivery site made this job worthy of notice, as the L.N.E.R. contract was to poke the girder through a hole left in the rear wall until the whole length was inside. Boilers up to 39 tons in weight have been delivered to sites as far as 6 miles from the station, unloaded (by hand equipment), and placed on prepared seatings, often rather

difficult of access. For instance, some have had to go as much as 14 ft. below ground level, and in one well-remembered case three 36-ton boilers had to be rolled over 50 yards of grassland, turned end-on, worked forward 50 ft., and then placed on seatings 12 ft. below ground level. During the past few months over twenty boilers, which have had to be taken in a horizontal position into the boiler houses, and then placed on prepared foundations in a vertical position, have been dealt with. In the confined spaces available these have been awkward undertakings.

Boiler seating is work which has to be carried out with great precision.

The boilers have to be left as shown in blue prints supplied by the boilermakers, and it is common for the prints to show measurements ending in one-eighth of an inch between a wall and a boiler or between boilers. Then there is the levelling to be carried out correctly; the usual requirement is a  $1\frac{1}{2}$ -in. fall from the back end to the front end of a 30-ft. boiler. Boilermakers require a certificate signed either by their own service engineer or by the consignee's engineer that a boiler has been placed, lined, and levelled up to his satisfaction. In one case, when the boiler was for a public institution and the authority had three engineers, each with his own idea as to correctness, interested in the job, the securing of a signature on the dotted line became a matter of considerable tact and diplomacy.

This heavy work is interesting and new problems constantly arise. No two jobs are alike, and there is always some new method to adopt, or some old one to be improved upon. The work pays, in itself, and, moreover, it often is the means of securing or retaining very valuable traffic to rail. Competition in this field is keen. The day may never come when it can be claimed that anything moveable can be put anywhere in the Southern Area, but already much has been done.



*Haulage of a 35-ton locomotive (part of two locomotives and two tenders) sold by the L.N.E.R. to Denham Film Studios and steamed to Denham station. They were loaded by hand equipment from rails to road vehicle, and unloaded by the same means on to rails at the studios*



*Two boilers, each 30 ft. long by 9 ft. 3 in. in diameter, unloaded by hand equipment directly from wagon to working positions at Colchester. The boiler on the left is over prepared foundations, while the other is partly on the wagon and partly on timber packing built up to receive it*

## A View of Road Transport in South Africa

*Some notes on transport services in the Union as seen by the Secretary of the Australian Commonwealth Railways*

**D**URING 1937, Mr. Edward Simms, M.Inst.T., Secretary of the Australian Commonwealth Railways, visited South Africa at the request of the Commonwealth Government, in order to investigate and report upon the transport services in the Union. He has embodied his impressions in an address read before the Institute of Transport in Sydney on September 29, and some of those relating to road transport and the Transport Act are as follow.

### Railway Road Services and their Organisation

Road services operated by the railways in the Union were introduced by the then General Manager, Sir William Hoy, in 1912. They now cover some 12,000 miles, and are run in conjunction with the railways with which there is no paralleling. Last year these services showed a revenue of over £500,000, and a good profit after paying operating, interest, and depreciation charges. Ample sums are put by for depreciation, based on a life of 5 years for a passenger and 8 years for a goods vehicle; there are over 850 vehicles in service.

The Road Motor Services Manager is attached to the office of the General Manager, and under each System Manager there is a representative officer who devotes his whole time to road matters. Rates, charges, and conditions of carriage for passengers and goods are set out similarly to those of the railways. Rates are on a mileage basis and apply equally throughout the Union. Stationmasters at railway stations control the road services from their stations, and for passengers or goods passing from road to

rail or *vice versa* a single through ticket or invoice is issued.

At important centres the railways maintain staff and equipment for collection and delivery services, and at other centres tenders are arranged with outside carriers for this purpose, the carriers acting on behalf of the railways. To give an idea of the extent of the cartage system, it is mentioned that at the Kazerne (main Johannesburg) goods depot alone there are 1,127 motor and other delivery vehicles owned by the administration. The collection, customs clearance, and delivery at hotels, &c., of ocean passengers' luggage is a feature, providing a cheap and greatly appreciated service.

### Control of Road Transport Generally

Dealing with the control of transport in the Union, the Act of 1930 provides for one central and nine provincial boards, each with jurisdiction and power in its own province to issue licences. The Act is framed essentially for the protection of existing transport services, and so long as these are satisfactory, sufficient, and reasonable in their charges to meet the transport requirements of the public, a board shall not grant any further motor carrier certificate applied for within the area, or along the route applied for. The security of existing services is therefore assured and they are saved from financial embarrassment in many instances, to which they would otherwise be exposed. The result is a notable virility and up-to-dateness in established services, which, Mr. Simms considers, is very creditable to the Union.

## Scarce View of the First London Omnibus

**I**N the summer of 1929 it may be recalled that the London General Omnibus Co. Ltd. co-operated with Thomas Tilling Limited, in celebrating the centenary of the London omnibus. The proceedings were fully described and illustrated in our issues of June 28 and July 5 of that year, and one of our illustrations showed the facsimile of the original vehicle which was built to take part in the procession. At that time it was stated that very few contemporary illustrations of the original vehicle were in existence, and therefore we were interested the other day to see in the St. Pancras Municipal Exhibition an unusual picture from the Heal Collection dated 1830. This view, which we reproduce alongside, shows one of the original vehicles which George Shillibeer introduced in London. His first service was inaugurated on July 4, 1829, and extended between the "Yorkshire Stingo," Marylebone, and the Bank.



*Printed & Sold by W. BELCH, 76 & 78, Bow, London*

*An 1830 picture from the Heal Collection*

## North Western Transport Buses, India

IN our issue of July 29 we published an article describing the North Western Transport Co. Ltd., a road undertaking in the Punjab, in which the North Western Railway is associated with a private contractor. We are now able to illustrate one of the 10 buses of this concern, the bodies of which have been built in the Punjab and mounted on 2½-ton Bedford chassis. As will be seen there is upholstered seating and accommodation is for 20 passengers. There is ample space for luggage on the roof and an ordinary as well as an emergency door on the near side, a movable seat giving access to the latter.

This venture is, apparently, continuing to be operated very satisfactorily and successfully, and with the advent of cooler autumn weather traffics should further increase. It is to be hoped that arrangements will be made to extend the activities of this partly-Government enterprise to other fields in the Punjab.

We take this opportunity to correct a printer's error in the caption to the illustration on page 216, in the article referred to above, in which the General Manager's name is given as Lt.-Colonel Carter instead of Lt.-Colonel Carson.



Above : Interior of one of the buses



Left : Exterior of one of the North Western Transport (India) buses described in the article

### A Pioneer Trolleybus Installation

THE trolleybus undertaking at Drammen, in Norway, is probably the oldest in the world to have been established for regular service. It was built in 1909 by the German engineer Schiemann for a private company called the Drammen Electric Railway, in which the Drammen municipality participated. The company began with four 25-seat vehicles, and in 1910 secured two more, all from Germany. In 1912 a 30-passenger trolleybus, built in Oslo, was obtained, and in both 1914 and 1915 the company built one vehicle in its own shops. The streets were then in a bad state of repair, and accordingly the running costs for the solid tyres were high. The chain drive gave rise to considerable trouble, the motors were not large enough, and other constructional details were faulty. The main brakes acted on the intermediate axle shafts and thus set up dangerous stresses between the cardan and the chain drive. The financial position of the company grew gradually worse and early in 1916 traffic was discontinued for a time. Later in the same

year the equipment, which was in a very bad state, was bought by a consortium headed by an engineer named Fritz Larsen, and on May 1 the service was re-opened by the present company, A/S Trikken. Between 1916 to 1926 three new vehicles were built and the change was made to pneumatic tyres, a great improvement which resulted in considerably lower repair costs and better running. The present pneumatic-tyred fleet was built between 1927 and 1931 at the company's own works. The standard unit is a 40-passenger vehicle driven by a 15 kW. series motor of A.E.G. make. Metropolitan-Vickers has supplied the controllers, and Timken the back axles. The total stock comprises 10 vehicles, of which 6 are in daily service during the summer and 7 in winter. One trolleybus is always available for overhaul and the balance of the fleet—3 in summer and 2 in winter—held in reserve. Experiments are at present being carried out with two new trolleybuses of modern type. The underframes and electric controls are by Ransomes, Sims & Jefferies, Limited, and the bodies are being supplied by the Hønefoss body works to the designs of the English firm.



## Overseas Notes

### Rule of the Road in Austria

It was reported from Vienna on September 22 that the rule of the road had been changed from left to right throughout Austria to conform with the rest of the Reich. Thousands of motorists turned out to test the change, which on the first day resulted in only one death.

### British Practice in Hyderabad

The Nizam's State Railway has recently built new repair works at Secunderabad for its large fleet of both passenger and goods motor vehicles. The layout has been modelled largely on that of the Darlington works of the United Automobile Services Limited, which we illustrated and described in our issue of April 9, 1937.

### Road Services of the Czechoslovak State Railways

The present re-arrangement of the Czechoslovak frontiers will result in considerable mileage reductions in the road motor services of the Czechoslovak State Railways. The railways administration has maintained its own motorbus services since 1927, partly for linking outlying places with the railway, and partly for providing supplementary facilities along rail routes. The railways in 1933 took over from the Post Office the great bulk of motorbus services until then conducted by the Post Office department. According to the latest available figures, the railway motorbus services totalled 300 routes, of approximately 4,875 miles, maintained by 700 motorbuses and 30 other vehicles. In addition, since 1929, the railway administration has run motor lorry services in large centres, such as Prague, to accelerate goods transport between the various termini, and has also used motors to supplement rail facilities and to replace them on routes where goods transport by rail has been suspended or abandoned.



Motorbus of the Czechoslovak State Railways on service between Prague and Karlsbad. About half of this route is in territory now ceded to Germany

### Rail and Road Services in Burma

Co-ordinated road-rail parcel services in Burma are continuing to give excellent results, and traffic is expanding on all routes. The following table gives the summarised results for the last four years :—

Year	No. of parcels carried	Receipts Rs.
1934-35	14,898	15,206
1935-36	19,194	19,815
1936-37	20,405	23,315
1937-38	21,568	24,551

A scheme is at present under consideration for the collection and delivery of both goods and parcels throughout the Rangoon suburban area. It will serve a population of about half-a-million. There are at present some 20 suburban as well as the central passenger station, and a large number of goods stations also, including those on the jetties and wharves.

### Mozambique Road Transport

The Report on Economic and Commercial Conditions in Portuguese East Africa, published by His Majesty's Stationery Office, gives 22,350 km. as the total of the roads in the Government administered territory, of which 4,571 km. are first class. At the present moment the condition of the roads is poor owing in large part to disastrous floods. The Government is however allowing a large sum of money for

repairs and asphaltting. In 1936 there were 4,118 motor vehicles in the Colony, of which 2,351 were private cars and taxis, 1,154 lorries, and 613 motor cycles. The construction and maintenance of roads is provided for by a Road Fund supported in part by a surcharge on the import duties on petrol and in part by a "road code" duty also, with certain exceptions, levied on imported petrol. The Ports and Railways Administration operates motor lorry services to link railheads with the economically important ports of the Colony. The service comprises a fleet of 59 lorries (mostly of United Kingdom manufacture), and in 1936 some 162,172 passengers and 22,444 tons of freight were carried. Total receipts for the year at 4,334 contos exceeded expenditure by 1,132 contos.

### New S.A.R. Road Transport Workshop

The South African Railways Administration has recently completed a very fine ferro-concrete workshop for its Road Transport Department at Langlaagte. It measures 450 ft. by

150 ft. and is remarkable for the fact that the floor space is broken only by 11 columns supporting the roof. The latter is specially designed on the "shell" system, which closely resembles the jack-arch type of roofing, but is on a larger scale. The roof is very light, being only 2½ in. thick, and is in the form of 12 transverse vaults or arches, each of the 11 valleys between these vaults being supported midway in the length by one of the columns mentioned above. The columns are spaced at 37 ft. 6 in. centres, which is also the approximate span of each vault, and the minimum clear height of the roof is 30 ft. measured to the valleys of the vaulting. The lighting of this building is also a speciality, there being frequent roof lights in each vault, and the upper parts of the side walls are entirely composed of windows. Equipment consists of two 20-ton and two 10-ton cranes, and there are double-hinged doors the full length of the building. Rail facilities extend into the shop.

### Denmark-Germany Bus Service

The inauguration of a direct motorbus service between Denmark and Germany is to take place when the Rodby-Fernern ferry service is opened. Local reports state that the Danish State Railways are negotiating with the German State Railway on this matter. The buses would run between Copenhagen and Hamburg and would be operated jointly by the Danish and German State railways.

## RAILWAY NEWS SECTION

### PERSONAL

#### INDIAN PACIFIC LOCOMOTIVE COMMITTEE

The members of the Pacific Locomotive Committee, which, in consequence of the Bihta derailment of July 17, 1937, has been inquiring into the design and purchase of Pacific locomotives for India, left Simla for Bombay on October 11 and sailed for home on October 15. We reproduce herewith a

the Secretary of the Department of Scientific and Industrial Research.

Mr. George C. Wakeman has been appointed General Traffic Manager, Trans-Canada Air Lines, with headquarters at Montreal. He was born in England in 1890, and went to Canada in 1901, where for 12 years he was employed in railway and steamship transport, with the Canadian Pacific, Thos.

late Cadet, City of London School Contgt., O.T.C.), J. A. Gow.

Territorial Army, Royal Engineers, Engineer & Railway Staff Corps: Lt. H. W. H. Richards, M.Inst.C.E., M.I.Mech.E., M.I.E.E. (late R.E.), to be Major (October 5).

Mr. M. L. Malan, Chairman of the Free State Land Board, has been appointed a Commissioner on the



Left to right (seated): Monsieur R. Leguille (Member), Mr. W. A. Stanier (Member), Lt.-Colonel A. H. L. Mount (Chairman), Mr. R. Carpmal (Member), and Rai Bahadur P. L. Dhawan (Member)  
Standing: Mr. Md. Jamil, Mr. Nissar Ahmad, Mr. H. Theodore (Hallade operators), Mr. E. S. Cox (Technical Assistant), Mr. K. C. Bakhle (Secretary), Mr. V. B. Narayan and Mr. L. G. Dias (stenographers)  
Seated on ground: Messrs. Y. B. Shelar and Bikoo Anmanth

#### Indian Pacific Locomotive Committee

group photograph of the committee and its staff.

#### DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH

The Lord President of the Council has released Professor R. H. Fowler, O.B.E., F.R.S., at his own request for reasons of health, from the engagement to assume the directorship of the National Physical Laboratory as from October 1, in succession to Dr. W. L. Bragg, O.B.E., D.Sc. To the vacancy thus created, the Lord President has appointed Dr. C. G. Darwin, M.C., Sc.D., F.R.S., Master of Christ's College, Cambridge. For the period until Dr. Darwin can assume his duties, the Lord President has decided that the office of Director shall be held by Sir Frank Smith, K.C.B., C.B.E., Sec.R.S.,

Cook & Son Ltd., and Raymond & Whitcomb. Mr. Wakeman's air experience began in the war, and in 1928 he was appointed an Inspector of Canadian Civil Aviation.

At the General Managers' Conference, held at the Irish Railway Clearing House on October 10, Major Malcolm Speir, Manager and Secretary of the Northern Counties Committee, L.M.S.R., was unanimously elected Chairman of the conference for the year 1939.

From *The London Gazette* of October 14: Regular Army Supplementary Reserve of Officers, Royal Engineers, Transportation: The undermentioned to be lieutenants (September 25):—

A. C. Clarke, Sergt. F. T. Russell (from Artists Rifles, O.P.U., T.A.;

South African Railways & Harbours Board with effect from September 1, 1938. Mr. Malan fills the vacancy on the board caused by the death of Mr. D. Hugo on July 7 last.

Mr. J. H. Stewart, Superintendent (Staff), General Manager's Office, South African Railways & Harbours, has been appointed Chief Superintendent (Staff), General Manager's Office, Headquarters.

We regret to record the death on October 5 of Mr. Ebenezer Fraser, A.M.Inst.C.E., who retired in 1933 from the post of Chief Engineer, Great Indian Peninsula Railway. He joined the North-Western Railway (India) as an assistant engineer in 1905, becoming Executive Engineer in 1915. Mr. Fraser joined the G.I.P.R. as Deputy Chief

Engineer in 1924, and was made Chief Engineer in 1928.

Mr. J. I. G. MacGregor, M.Inst.C.E., who, as recorded last week, has been appointed Assistant Engineer, Scottish Area, London & North Eastern Railway, began his career with two years' experience in the works of the Lanarkshire Steel Company at Motherwell, followed by a two-year course in architecture. In 1899 he entered the Chief Engineer's Office of the Glasgow & South Western Railway, and after three years' service was appointed Assistant District Engineer with the North British Railway at Glasgow, being subsequently transferred as a Senior Assistant to the new Works Department in the Head Office at Edinburgh. In 1916 Mr. MacGregor became



**Mr. J. I. G. MacGregor**

Appointed Assistant Engineer,  
Scottish Area, L.N.E.R.

District Engineer for the Border District of the North British Railway, with headquarters at Carlisle, and held that position till 1923, except for two years—1919-21—during which period he was District Engineer at Glasgow. In 1923 Mr. MacGregor was appointed District Engineer (Central District, Edinburgh), which position he held until transferred to the Head Office as District Engineer (Head Office), Edinburgh, in 1929.

Mr. R. W. McCall has been appointed to succeed Mr. F. W. Box as Chief Engineer for Construction, Victorian Government Railways.

Sir George E. Clark and Major J. A. Macdonald have been co-opted as additional directors of the Sentinel Waggon Works (1936) Limited.

Mr. T. P. Cargill, Managing Director of the Anderston Foundry Co. Ltd., is retiring on October 31, and will be succeeded as from November 1 by Mr. Geo. D. Cunningham.



Photo.]

[Allied Newspapers

Left to right: Messrs. G. H. Loftus Allen, T. E. Argile, Ashton Davies (Acting Vice-President), T. W. Royle, A. L. Castleman

#### Complimentary dinner to L.M.S.R. Acting Vice-President

A gathering of L.M.S.R. officers and former colleagues on October 6 entertained Mr. Ashton Davies to a complimentary dinner at the Midland Hotel, Manchester, to celebrate his appointment as Acting Vice-President (Railway Traffic, Operating & Commercial), L.M.S.R. On behalf of the subscribers, Mr. T. E. Argile (Acting Chief Commercial Manager) presented Mr. Ashton Davies with a silver cigar-box, together with a vellum bearing the signatures of the subscribers, and an evening bag for

Mrs. Davies. Mr. Argile and other speakers testified to the esteem and regard in which Mr. Ashton Davies was held, and the latter in reply said how delighted he was with the spontaneous expression of good will accorded him, whilst the co-operation of his colleagues had been mainly responsible for his appointment to the high office which he had now accepted. He felt sure, added Mr. Davies, that he would continue to have that support which he had been privileged to receive in the past.



Photo.]

[Allied Newspapers

Group at dinner to Mr. Ashton Davies, Acting Vice-President, L.M.S.R.



## G.W.R. APPOINTMENTS

The following appointments are announced by the G.W.R.:—

Mr. C. Hybart, Draughtsman, Dock Mechanical Engineer's Office, Port Talbot, to be Assistant Mechanical Engineer, Port Talbot Dock (as from September 1 last).

Mr. W. H. Walters, Clerk, Divisional Locomotive Superintendent's Office, Neath, to be Chief Clerk, Divisional Locomotive Superintendent's Office, Bristol (as from September 12 last).

Mr. J. W. Griffin, Clerk, Secretary's Office, Paddington, to be Registrar of Deeds and Records, Paddington (from October 27).

Mr. C. E. Shaw, Chief Clerk, District Goods Manager's Office, Birmingham, to be Assistant District Goods Manager, Birmingham (as from October 10).

Mr. H. H. Starr, Chief Clerk, Birmingham Goods, to be Chief Clerk, District Goods Manager's Office, Birmingham (as from October 10).

Mr. F. A. Cartwright, Chief Clerk, District Goods Manager's Office, Cardiff, to be Assistant District Goods Manager, Cardiff (as from October 10).

Mr. E. L. Reese, Clerk, District Goods Manager's Office, Cardiff, to be Chief Clerk, District Goods Manager's Office, Cardiff (as from October 10).

Mr. J. Powell, Junior Assistant, District Goods Manager's Office, London, to be Chief Clerk, District Goods Manager's Office, London (as from October 17).

We regret to learn of the death in Winnipeg recently, of Mr. John G. Sullivan, sometime Chief Engineer of the Canadian Pacific Railway and President of the American Railway Engineering Association. Mr. Sullivan was an engineer of international repute and was 75 years of age. He was born in the U.S.A., and graduated at Cornell University. After varied experience in that country and in Canada, he was responsible for the survey of the Butte, Anaconda & Pacific Railroad through difficult country. In 1905 he laid out the railways in connection with the Panama Canal, where he was Assistant to the Chief Engineer, but two years later joined the C.P.R., as Manager of Construction; later he became Assistant Chief Engineer and finally Chief Engineer. Among the works carried out under him were the five-mile tunnel under Rogers Pass in the Rocky Mountains, extensive works at Winnipeg, and the Connaught tunnel. For the latter work he introduced the centre heading system of boring, enabling the full enlargement to be made in one operation, and a greatly increased volume of the work to be done by mechanical methods. Mr. Sullivan resigned from the C.P.R. in 1919, and until 1923 was Chairman of the Manitoba Drainage Commission; he was also at one time President of the Canadian Engineering & Construction Co. Ltd. In 1922 he was President of the Engineering Institute

of Canada, and was an Alderman of the City of Winnipeg.

INSTITUTION OF CIVIL ENGINEERS  
AWARDS FOR PAPERS

The Institution of Civil Engineers announces that Telford premiums have been awarded to the following authors of papers read and discussed at ordinary meetings:—

Sir George Lee (Past President, Institution of Electrical Engineers): "Recent Engineering Developments in the General Post Office (London)."

Mr. M. G. J. McHaffie, M.Inst.C.E. (Docks Engineer, Southern Railway): "Southampton Docks Extension."

Mr. George Ellson, M.Inst.C.E. (Chief Engineer, Southern Railway): "Dover Train Ferry."

Mr. Frank Fancutt, A.M.I.Chem.E. (L.M.S.R. Research Department): "The Work of the Paint Research Laboratory of the L.M.S.R."

Mr. T. H. Seaton, M.Inst.C.E. (Assistant to Engineer, New Works, L.N.E.R.): "Engineering Problems Associated with Clay Slips."

The institution has also awarded Telford premiums to the following authors of papers published in the journal without oral discussion:—

Professor F. C. Lee, M.Inst.C.E., and Mr. J. G. Whitman, M.Eng.: "The Failure of Girders under Repeated Stresses."

Mr. G. C. Blofield: "Reconstruction of the Mocoreta and Timboy bridges, Argentine North-Eastern Railway."

Mr. John Hayes: "The Strengthening and Reconstruction of Weak Bridges under the Road and Rail Traffic Act, 1933."

Mr. E. F. Humphries: "Design, with Special Reference to (a) King's Cross Sewer Diversion; (b) Sloane Square Station Reconstruction."

We regret to record the recent death of Mr. J. J. Poynton, General Manager and Attorney of the Midland Railway Company of Western Australia. Associated all his life with transport, at an early age Mr. Poynton joined the Victorian Government Railways, and he occupied a senior position in that department when his services were secured by the Commonwealth Government, then about to build the Great Western Railway. Subsequently he was appointed General Superintendent of the Commonwealth Railways and also Comptroller of Stores. In 1920 he accepted an appointment as General Manager of the Midland Railway Company of Western Australia, and in 1926 he became also Attorney in Western Australia for the company. He interested himself in motorbus transport and at the time of his death was connected with several bus companies operating in the metropolitan area. In the commercial, financial and civil life of the city of Perth and the State of Western Australia, Mr. Poynton occupied many positions of high trust which demanded rare administrative ability and a wide knowledge of affairs.

We regret to record the death on October 18 of Sir Edmund Wyldbore-Smith, at the age of 61. His early career was in the Consular Service, but throughout the great war he was Director of the international commission for the purchase of supplies for the Allies. He resigned from the Civil Service in 1919 to devote his energies to his many company directorships. He was Chairman of Thos. Cook & Son Ltd., and of Thos. Cook & Son (Bankers) Ltd.; a Director of the Pullman Car Co. Ltd.; Vice-President of the International Sleeping Car Company; and a Director of the Suez Canal Company. Among other companies on the boards of which he had previously served were the Metropolitan-Cammell Carriage, Wagon & Finance Co. Ltd., Associated Electrical Industries Limited, and the Metropolitan Railway Company.

## S.A.R. PROMOTIONS COMMITTEE

The South African Railways & Harbours Administration has appointed a Method of Promotion Committee, consisting of the following:—

Mr. F. T. Bates, Railway Commissioner (Chairman); Mr. C. M. Hoffe, Chief Accountant; Mr. J. A. Adam, General and Organising Secretary, Artisan Staff Association; Mr. R. M. Banks, General Secretary, Salaried Staff Association; Mr. W. H. Immanuel, Clerk, General Manager's Office (nominated by Spoorbond); and Mr. J. W. Strumpher, Driver, Cape Town (nominated by Locomotive Engineer's Mutual Aid Society).

The terms of reference of the committee are: To enquire into and report on the method of promotion and the application thereof in the railway service, and to make recommendations as to improvement considered necessary. Members of the staff desiring to put forward suggestions in writing in regard to matters falling within the scope of the committee's terms of reference have been cordially invited to do so.

It is with regret that we record the recent death of Mr. Valentine George Barford, for 36 years associated as Chief Draughtsman with John I. Thornycroft & Co. Ltd. Born in Northampton, he was educated at Kings School, Grantham, and served his time with Richard Hornsby & Sons of that town, and during his apprenticeship was awarded the Hornsby Medal for the best student of his year. After service with Griffins of Bath, the Daimler Co. Ltd. of Coventry, Ransomes & Rapier Limited of Ipswich, and the Wantage Engineering Co. Ltd., he joined John I. Thornycroft & Co. Ltd. at Chiswick in 1902 and was largely responsible for the design of the "C4" tractor which was so successful in the early War Office trials. He was a member of many professional associations, amongst which were the Institution of Automobile Engineers and the American Society of Automobile Engineers; and he served

on the technical committees of the Society of Motor Manufacturers and Traders, and the British Engineering Standards Committee.

#### RAILWAY CLEARING HOUSE

At a meeting of the Superintendents' Conference held at the Railway Clearing House on Wednesday last, Mr. F. R. Potter, Superintendent of the Line, Great Western Railway, was unanimously elected Chairman of the Coaching Traffic Superintendents' Conference for the year 1939, and Mr. H. E. O. Wheeler, Superintendent of Operation, Southern Railway, was unanimously elected Chairman of the Operating Superintendents' Conference.

We regret to record the death of Mr. Charles Ronald Vawdrey Coutts, Manager and Actuary of the Provident Mutual Life Assurance Association since 1914, which occurred suddenly in his office in Moorgate, E.C., on Monday. He was 62. It was his first appearance at the office since his return during the week-end from the Actuarial Congress in New York. Mr. Coutts was the son of the late Rev. C. F. Coutts, of Richmond, Surrey, and was educated at Marlborough. He became a Fellow of the Institute of Actuaries in 1902, was Vice-President from 1924 to 1927, and President from 1934-1936. During the last three years of the great war Mr. Coutts was at the Ministry of Munitions.

#### FUNERAL OF SIR HENRY FOWLER

The funeral of Sir Henry Fowler, whose death is referred to on pages 674 and 685, took place at Spondon, Derbyshire, on Wednesday. In addition to family mourners, the following representatives of the L.M.S.R. were present:—

Mr. T. M. Herbert (representing Sir Harold Hartley, Vice-President, L.M.S.R.), Major G. S. Bellamy (representing Mr. W. A. Stanier, Chief Mechanical Engineer), Mr. S. J. Symes (Chief Stores Superintendent), Mr. T. F. Coleman (Technical Assistant and Chief Draughtsman, Locomotive Drawing Office, Derby), Mr. C. A. Turner (representing Mr. E. Pugsion, Carriage and Wagon Works Superintendent, Derby), Mr. D. W. Sanford (Development Assistant, Chief Mechanical Engineer's Department, Derby), Mr. R. C. Archbutt (Outdoor Machinery Assistant, Derby), Major F. H. Sutherland (Assistant to Technical Assistant, Derby), Mr. S. H. Whiteley (St. Rollox Works), Mr. J. Rankin (Chief Mechanical Engineer's Department, Crewe), Lt.-Colonel J. W. Watkins (representing Mr. J. H. Follows, former Vice-President, L.M.S.R.), and Mr. H. F. Loney (former Goods Manager, Derby).

Representatives of other railways and institutions were:—

Mr. J. Clayton, Personal Assistant to C.M.E., Southern Railway (representing Mr. Gilbert S. Szlumper, General Manager, and Mr. O. V. Bullard, Chief Mechanical Engineer, Southern Railway; also Sir Nigel Gresley, Chief Mechanical Engineer, L.N.E.R.), Capt. J. A. E. Drury-Lowe, Dr. T. Swinden, Professor C. H. Bullard (Institution of Mechanical Engineers and Nottingham University College), Mr. A. J. G. Sinout (Institute of Metals), Mr. Neville Greeton, and Mr. Gordon Robotham (Railway Servants' Orphanage).

## Signal Engineers' Annual Dinner

The 18th annual dinner of the Institution of Railway Signal Engineers was held in London on Friday, October 14, under the chairmanship of the President of the institution, Mr. G. H. Crook, Chief Assistant to the Signal Engineer, Great Western Railway. There was a large attendance. Mr. Crook was supported by the Vice-President, Mr. James Boot, a number of past presidents, members of council, and the officers of the institution. The guests of the institution were Mr. J. Clayton, Vice-President of the Institution of Locomotive Engineers, and Mr. H. M. Young, Assistant to the Signal Engineer, G.W.R., and it was further honoured by the presence of Mr. P. M. Gault, Signal Engineer of the Missouri Pacific lines, U.S.A.

Mr. J. Clayton proposed the toast of "The Institution," saying that he brought the greetings of the President and Council of his own institution, who had many ties with those he now had the honour to address. The progress of signalling had gone side by side with that of the locomotive, the success of which would have been unthinkable but for the existence of efficient signalling systems. This was particularly exemplified in the case of the high-speed trains now being run, where the disadvantages accompanying bad weather conditions were largely counteracted by the adoption of improved signalling methods, while the intensive electric suburban services, now being extended to new districts, were possible only with the aid of the automatic colour-light signals and track circuits, the product of the signal engineer's ingenuity. Automatic train control, too, was another valuable invention for which the locomotive engineer had to thank the signal engineer. The Institution of Railway Signal Engineers was playing a world-wide part in these technical improvements. It would be an excellent thing if joint meetings and discussions could be arranged with the Locomotive Engineers. They were justifiably proud of the high standard of safety achieved on the railways of Great Britain; Colonel Mount's last annual report showed only one passenger killed in 37 millions carried, a wonderful result, due in great measure to the work of the signal engineer.

Mr. G. H. Crook, responding, said they greatly appreciated the remarks that had fallen from Mr. Clayton; they would certainly give the proposal to hold joint meetings their most sympathetic consideration. He proceeded to give an outline of the activities of the institution during the previous year, which covered a good deal of standardisation work undertaken in association with the British Standards Institution. The membership stood at a most satisfactory figure. The summer meeting and the other visits to works and installations had been most successful and he thanked all those who had assisted

with them. He regretted very much the absence that evening of Mr. F. H. D. Page, the Signal Engineer of the G.W.R., who was indisposed; that gentleman had charged him with a message, wishing the gathering an enjoyable time. They all wished him an early and complete recovery from his illness. They were very happy to see Mr. Gault among them. The Signal Engineer of a great American railway system, he was active in the Association of American Railroads, particularly in the matter of improving level crossing protection.

Mr. James Boot, Vice-President, proposed "Overseas Members," pointing out the link which the institution created between them and those in the profession at home. They had members in all parts of the world and had received some excellent papers from them, a recent example being that contributed by Mr. G. W. Wyles.

Mr. G. W. Wyles, Signal Engineer, New Zealand Government Railways, replied to the toast, commenting on the good work done by the institution, much appreciated overseas. If anything he thought the papers tended to be too conservative. Standardisation was being effected in New Zealand in many directions. Owing to local conditions, such as the existence of a national railway system, there was much uniformity in the practice adopted, but here in Great Britain one could still see a great deal of variety, which perhaps added to one's interest. Overseas members always met with wonderful hospitality when re-visiting the homeland.

Mr. R. S. Griffiths, Past-President proposed "The Visitors." Alluding to the signal engineer's work, he said it could, as regards its relation to his locomotive colleagues, be expressed by modifying a well-known advertisement and saying "You want the best signals: we have to give them." They all recognised the value of joint work with other technical bodies and were willing and anxious to join in it. They had American members in their institution and would send greetings to them through Mr. Gault.

Mr. H. M. Young, in reply, said how happy he was to be present and be able to tell them the pleasure it always afforded the G.W.R. to do anything for their institution.

Mr. P. M. Gault, Signal Engineer, Missouri Pacific lines, said he brought the greetings of the signal profession in America. He gave particulars of the installations on his own railway and touched on the standardisation work being done by the A.A.R., in the matter of signal aspects and numerous other details.

The dinner was followed by a dance, at which music was provided by an orchestra from the L.N.E.R. Musical Society; Mr. C. H. Hills, Member of Council, acted as M.C.

## Southampton Docks Centenary Celebrations

Mayoral banquet for Southern Railway directors and officers—Supper for docks supervisory and clerical staff

In connection with the centenary celebrations of Southampton Docks (see also page 655 last week) the directors and principal officers of the Southern Railway were entertained at a banquet given in Southampton's new Guildhall on Wednesday evening by the Mayor and Mayoress, Councillor and Mrs. G. E. H. Princet; the Sheriff, Councillor A. H. Powdrill, and Mrs. Powdrill, and many of the leading citizens of the town.

The Mayor, who proposed the health of the guests, said it pleased them to welcome Mr. Robert Holland-Martin, and Mr. E. Gore-Browne, the Chairman and Deputy-Chairman of the railway company, and they were delighted also to have with them Sir Francis Dent and Sir John Thornycroft, directors of the company, who were extremely well known in the district. Recalling former docks managers, the Mayor said that some present would remember the late Mr. John Dixon, more would recall Mr. T. M. Williams, and practically everyone would recollect Mr. Gilbert S. Szlumper's association with the port. Mr. E. J. Missenden had made many friends during his short stay in the port, and Mr. R. P. Biddle, the present Docks and Marine Manager, was held in very high esteem. The Mayor remarked that since the docks had been taken over by the former L.S.W.R. the population of the town had grown from 65,000 to about 180,000.

Mr. Robert Holland-Martin, who replied, said that the honour done the railway company emphasised the close connection there had always been between that company and the municipality. It was the intention of the Southern Railway further to cement that connection, he declared, and he looked forward to a happy co-operation in the future. He referred to the many amenities possessed by the town, which the citizens would do well to guard and use. They should see to it that they made the most of their advantages. In the land reclaimed from the sea they had the possibility of great industrial expansion, which would assist the town, the docks, and the railway. The Southern Railway was a great team with which to work, and it was impossible to praise any individual without praising the whole railway company. The Mayor had laid great stress on the services of those working for the company today, and he too, would like to thank them—Mr. Biddle, Mr. McHaffie, and all their assistants for the magnificent work they had put into the centenary celebrations.

Mr. E. Gore-Browne said the connection between the railway company and the town was an extremely close one, hallowed by time, and it became

closer and more intimate as the years passed. It was a case of a main-line railway and a great municipality working together for a common purpose, and the more he looked back upon the connection, the more he had been impressed by how closely the interests had intermingled. Recalling that the original docks scheme had been ridiculed, Mr. Gore-Browne wondered whether people thought much the same when the Southern Railway first decided to proceed with the Docks Extension scheme.

Mr. Gilbert S. Szlumper, General Manager of the Southern Railway, proposed "Our Hosts," and he referred to the helpfulness of civic officials to the docks scheme. "I have amused myself by poring over some of the history since I have known Southampton," he remarked. "I regret to say that some of your councillors and civic worthies were not always polite when discussing the Docks Extension scheme, and they said some quite rude things to each other. One worthy dignitary was unworthy enough to refer to the scheme as 'Szlumper's eyewash' (laughter), and, indeed, I am happy to have lived to prove that the mixture was more fertile than eyewash."

Alderman Sir Sidney Kimber, who replied to the toast, said that as long as the Corporation, Harbour Board, and the Southern Railway worked together, as they had done for many years, hand in hand, then the future of the port was bound to be assured. Sir Sidney emphasised the importance in the future of the town securing every bit of the waterfront from Netley to Hythe as part and parcel of the port.

A telegram from Mr. Leslie Burgin, M.P., Minister of Transport, read, "The faith of the promoters has been abundantly justified by the proud position which the docks now occupy as the focal point of rail, sea, and air transport."

### Staff Supper

The final event in connection with the centenary of the docks was a supper to 773 members of the supervisory and clerical staff, including 162 pensioners, and all departments were represented. The function was held in the new workmen's rest room and canteen, erected recently near to the King George V Graving Dock, and Mr. R. P. Biddle, Docks & Marine Manager, presided. The Chairman of the Southern Railway Company, Mr. R. Holland-Martin, and the Deputy Chairman, Mr. E. Gore-Browne, were both present, and among other headquarters officials who attended were Mr. Gilbert S. Szlumper, General Manager.

Mr. R. Holland-Martin, responding

to the toast of "Our Chairman," stressed the value to the company of family associations which in many instances went back one or two generations, or possibly more. "That is a very great thing," he said. "No work in this world can be properly done unless it is carried out in a team spirit, and no team works like a family. . . . We are all working to keep our great line the foremost railway in England."

Mr. Gore-Browne paid tribute to the staff, mentioning particularly the captains and sea-going members of the company's fleet.

Mr. Gilbert S. Szlumper responded to the toast of "Our General Manager," and in the course of his remarks referred to the increasing number of factories at the new docks and hoped everyone would strive to see that the estate was further developed. Although there were only 800 present that evening out of a staff of 6,800 or 6,900—it would have been necessary to cover the King George V graving dock if they were all to be entertained to supper.

Mr. E. J. Missenden, Traffic Manager, briefly addressed the company, after which Mr. R. P. Biddle replied to the toast of "Our Docks & Marine Manager." In so doing he thanked all his assistants and the staff for the help they had given him, not only in connection with the centenary and the recent crisis, but throughout the year. He hoped that the next year would be one of success and happiness for everybody on the Southern.

**GRAND TRUNK RAILWAY PROCEEDINGS.**—The action brought by Mr. George P. Lovibond against the Grand Trunk Railway Company and the Canadian National Railways was dismissed in Toronto, on September 24, by Mr. Justice Jeffrey. The plaintiff sought \$14,000 damages for alleged illegal transfer of his stock in the Grand Trunk Company. The hearing lasted eight days in high court. His Lordship held that during negotiations that preceded the acquisition of the Grand Trunk by the Government, the plaintiff was well aware of what was going on and even bought some of his stock after an arbitration award had been made declaring that the stock of the road had no value. It was also ruled that the case came within the Statute of Limitations and failed because of lapse of time. Mr. Justice Jeffrey said that as the case would no doubt go further, he would explain that the Grand Trunk Railway of Canada was in an insolvent condition and had been so for years previous to arbitration. Part of the Grand Trunk system was the Grand Trunk Pacific Railway, which was not a success and which had been unable to carry on, and a receiver was appointed. The situation with regard to the Grand Trunk was fully appreciated by its officers.



## Reduction in French Train Services

Chief feature of the winter alterations is the withdrawal of many high-speed railcar services

On October 2 a revised train service was brought into force on the lines of the French National Railways, and for the first time for many years past, it embodies considerable reductions in the facilities previously offered. This measure has been rendered necessary by the fact that, despite economies in various directions, made possible by the recent grouping, the deficit on the working of the railways has not yet been extinguished, so that more vigorous measures of economy have been taken. The principle adopted has been to withdraw all services which are not regarded as remunerative and indispensable, including the majority of the high-speed railcar services; to vary as may be required the times of other services, so that the facilities now given may be as evenly spaced as possible; and, in particular, to increase the range of the services to which third class passengers are admitted, so that on various routes the last-mentioned are even better served than before the reductions took effect. The result of permitting third class travel on certain *rapides* has been so greatly to increase their weight that with 600-ton trains some deceleration has been essential. Another important change, commented on in an editorial note on p. 673 of this issue, has been the transfer from the South-Western Region (late Paris-Orleans-Midi) to the Western Region (late Etat) of the former's line from Saumur to Angers, Nantes and Le Croisic, which previously cut right into the Western territory, and the transfer of all through traffic from Paris to Nantes, St. Nazaire and beyond from the Quai d'Orsay—Tours route to that from Montparnasse *via* Le Mans. Conversely the Western Region's traffic from Paris to La Rochelle, instead of going from Montparnasse *via* Chartres and Saumur, now goes from Quai d'Orsay *via* the Bordeaux main line, diverging at Poitiers on to the Western Region lines. The principal regional alterations, for information concerning which we are indebted to Monsieur M. Caire, Editor of our French contemporary *Transports*, are as follow:

### Northern Region

The high-speed railcar services between Paris and Lille are reduced from four to two each way daily, at 17.00 from Paris and 6.45 from Lille in 2 hr. 25 min. and at 11.25 from Paris and 11.34 from Lille in 2 hr. 35 min. for the 156 miles. Third class passengers are admitted to *rapides* Nos. 307, 311, and 315 down (10.00, 13.10, and 17.05 from Paris) and 304, 306, and 312 up (6.50, 9.17, and 13.20 from Lille), taking from 2 hr. 57 min. to 3 hr. 26 min. including stops for

the journey, and these services are expected to load to 600 tons daily. Another suppression is that of the daily railcar service between Paris and Liège, at 8.35 from Liège and 20.05 from Paris in 3½ hr. for the 226.7 miles; as compensation, the 18.20 from Paris now carries a section for Liège, which, however, takes 4 hr. 36 min., and there is a corresponding return service. The evening *rapide* at 17.34 from Liège to Paris, hitherto non-stop from Charleroi, has now an additional halt at Maubeuge, but arrives only 2 min. later. In all, the Northern Region has reduced its passenger train mileage by roughly 5,600 miles daily, and this is typical of what has taken place in all the regions. It has not been found possible to introduce the promised fast railcar service between Boulogne and Basle, which was to permit a comfortable journey in each direction between London and Switzerland without night travel.

### Eastern Region

The 8.00 high-speed railcar service from Paris to Nancy is withdrawn, and the 19.50 from Paris now completes its journey at Nancy instead of continuing to Strasbourg; similarly the 10.35 into Paris begins its journey at Nancy at 7.22 instead of at Strasbourg. There still remain two railcar services each way daily—at 17.30 from Paris to Strasbourg and 19.50 to Nancy, and 7.22 from Nancy and 8.05 from Strasbourg to Paris, taking 3 hr. to 3 hr. 13 min. for the 219 miles between Paris and Nancy. The Paris—Rheims—Charleville fast railcar service, and a similar service calling at principal stations between Paris and Troyes, are withdrawn. A number of *rapides* on both the Nancy and Belfort main lines have been withdrawn, and the service at these hours has been concentrated on "express" or semi-fast trains calling at all the chief intermediate stations, which is expected to result in some extremely heavy train loadings on tight point-to-point timings.

### South-Eastern Region

With the suppression of the railcar service at 18.45 from Paris to Lyons in 4 hr. 55 min., and the corresponding return service at 7.15 in 4 hr. 50 min., there are now no high-speed railcars over this route, though the streamlined steam train with reconditioned Atlantic locomotive still runs between Paris and Lyons, at 7.45 down in 5 hr. 5 min. and 18.50 up in 5 hr. 9 min., as well as the high-speed steam midday service between Paris and Marseilles at 12.00 down, in 9 hr. 5 min. for the 535 miles, and at 9.55 up in 9 hr. 10 min. Evidence of the lack of patronage of certain of the railcar services is given by the fact that the average complement of the 18.45 down has been only 36

passengers, and of the 7.15 in the morning from Lyons 23 passengers. The withdrawal of the former, for which the 17.50 express from Paris to Lyons was held 17 min. at Dijon, has enabled the latter to be accelerated 12 min. The Macon—Geneva railcar connection with the Paris—Lyons *train aerodynamique* is withdrawn for lack of patronage. Certain pairs of services over the main line between Paris, Lyons, Marseilles, and Vintimille are fused into one, but as no additional stops are needed, there has been no increase in journey time, and certain trains have been slightly accelerated.

### South-Western Region

In the South-Western Region the principal change is in the transfer of the Paris—Nantes service to the Western Region, with a reduction of 22½ miles in the length of journey. With the help of the Western Region electrification between Paris and Le Mans, which permits average speeds exceeding 60 m.p.h. over this section, it has been possible to cut the average journey time of the three principal day services in each direction by 15 min., and the best time from Paris to Nantes comes down from 4 hr. 30 min. to 4 hr. 18 min., with a corresponding advantage to Angers, St. Nazaire, and other towns on this route. One daily fast service is still maintained at 7.37 from Nantes to Paris (Quai d'Orsay) in 5 hr., continuing the previous 7.40 service, and in order that through facilities may still be maintained over the old route, a semi-fast service is still given by day between Quai d'Orsay, Nantes and Le Croisic, and by night between Quai d'Orsay, Nantes, and Brest. In replacement of the old Western Region service *via* Chartres, through portions between Paris and La Rochelle are now attached to the 8.45 and 12.15 trains from Quai d'Orsay, and in connection with the 17.25 *rapide*, a fast railcar is run from Poitiers to La Rochelle. The previous best time of 6 hr. 12 min. from Paris to La Rochelle, which operated in the summer season only, is thus brought down to 5 hr. 40 min., and the average journey time by day trains is cut by nearly an hour. On the Toulouse line the 13.15 semi-fast from Paris to Limoges leaves at 13.10 and is accelerated 55 min., reaching Limoges at 18.00 instead of 19.00 in the evening.

### Western Region

The high-speed railcar services between Paris and Havre, which had already been cut from four each way daily to two only in May last, are now further curtailed, only the 8.5 down and 17.50 up, each in 118 min. non-stop for the 141.5 miles, continuing to run. Reference has already been made to the new services between Paris (Montparnasse) and Nantes and Le Croisic, taken over from the South-Western Region; it is hoped further to expedite these when various necessary track improvements have been carried out

between Le Mans and Angers. As a result of new trains now running between these points, the through fast railcar hitherto run between Dieppe and Nantes now runs between Dieppe and Le Mans only, with connections between Le Mans and Nantes. In consequence of the transfer to the South-

Western Region of the traffic between Paris and La Rochelle (which is still, of course, taken over by the Western Region at Poitiers), all express service over the Western Region main line between Chartres, Saumur, and Niort is brought to an end, the only fast trains being a daily railcar from Chartres to

Saumur and back, and another from Saumur to Niort and back. Up to the summer of this year the non-stop run between Paris (Montparnasse) and Saumur, 177½ miles, was one of the longest in France, but it is now unlikely that it will ever reappear in the timetables.

## Hurricane Damage to Railways in New England, U.S.A.

**The worst non-tropical hurricane in history swept Long Island and the New England coast**

On September 21 the worst hurricane in the history of the New England States ravaged Long Island, Connecticut, Massachusetts, and Rhode Island, and to a lesser degree the more northern States. It followed eight consecutive days of rain that had caused widespread floods, and was accompanied by a tidal wave that did great damage along the coast. At Harvard University observatory a wind speed of 186 m.p.h. was registered. Many of the railways serving this region suffered very severely.

Those hardest hit were the New York, New Haven & Hartford; Boston & Albany; and Boston & Maine. The Long Island, New York Central, Rutland, Central Vermont, and Main Central lines also suffered in lesser degree. The Shore line of the New Haven road—the main New York—Boston route—was especially severely handled between New Haven and Providence, and the Saybrook—Westerly section of it had thousands of feet of tracks washed out, many bridges damaged or destroyed, and immense other damage done to it by the tidal wave. Until September 24 all traffic between New Haven and Providence was suspended, and thereafter and until September 26 train services ran eastwards only as far as Saybrook and westwards to Westerly.

### N.Y., N.H. & H. Most Affected

At New London on this section two sea-going steamers were washed on to the main line and several houses were uprooted bodily and, like many smaller vessels, were hurled on to the railway. At Stonington a train was stopped by signal as the flood engulfed it, but by dint of pushing aside one of these houses it managed to drag itself on to higher ground though much damaged by debris hurled against it. As it pulled out, telegraph wires wrapped round the locomotive and post after post was pulled down by them. Nearby also a 70-ft. through plate girder bridge was practically destroyed.

On other parts of the New Haven system there were many breaches especially in the Willimantic area. About 13 miles of track were submerged between Hartford and Springfield, and many other sections of line also suffered severely. In order to restore through freight traffic between New York and Boston as quickly as possible,

efforts were concentrated on repairs to the line running inland at New Haven via Middletown and Willimantic to Boston, and it was expected to reopen this route about September 28. Very serious damage also occurred at Providence, and martial law was in force there for about a week.

### The B. & A. and B. & M. Lines

The Boston & Albany and Boston & Maine east and west lines were all cut and seriously damaged by river floods. The main line of the former was out of action for about a week. At Brookfield, spill from a broken dam destroyed a 46-ft. span girder bridge, which had to be replaced by a 200-ft. trestle structure. On the B. & M. seven major bridges were washed out on the Gardner—Greenfield section. Near Miller's Falls 1,400 ft. of formation were washed out to a depth of 30-40 ft., necessitating 125,000 cu. yd. of filling. A 1,000-ft. hill-slide occurred between Gardner

and Hoosac tunnel. It was expected that it would be several weeks before through running between Hoosac tunnel, Greenfield, and Gardner could be restored, and meanwhile traffic was diverted northwards via St. Johnsbury and Portland.

### Other Railways

On the Long Island line damage was confined mainly to the formation and transmission lines. On the New York Central minor washouts and damage to small bridges occurred, but the principal troubles were due to loss of power, owing to various sources of current supply being flooded. The Central of Vermont system suffered considerable damage at its southern terminus, New London, where its freight station, workshops, and a bridge were completely destroyed. Also its freight steamer *Vermont* was washed up over the rocks and deposited on the tracks in the freight yard. On the 14 miles of line between New London and Norwich 25 vessels varying from big yachts to rowing boats had to be jacked up and removed from the track. The Rutland Railroad also suffered damage.

## STAFF AND LABOUR MATTERS

### Railway Wages

The executive committees of the National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, and the Railway Clerks' Association attended a meeting in London on Tuesday, October 18, to consider the position in regard to the claims of the unions to which the railway companies had stated on October 12 (as reported last week) that they could not accede. It is understood that the claims are to be submitted to the Railway Staff National Council.

### Short Time at Inchicore

As explained in these columns last week, an arrangement for the working of short time at the railway shops at Inchicore, made between the Great Southern Railway Company and the unions which were affiliated with the Dublin Trades Council, was ratified by the men belonging to these unions. However, the National Union of Railwaymen, which is not affiliated to the Dublin Trades Council, has protested against the reduction of the working week, which begins at Broadstone and at Inchicore this week. The daily papers report a rumoured decision to seek an injunction against the company

to resist any worsening of their members' conditions of employment, whereas on the other hand there are rumours of a strike of the men of the National Union of Railwaymen. It is difficult to say at the time of writing which if either is correct.

### Unofficial Strike on the L.M.S.R.

The strike of a certain number of porters, ticket collectors, carters, and carriage cleaners, which began at St. Pancras station on October 10, and later spread to Euston, Camden, and other depots, was called off on Saturday night, October 15, and the men resumed work early on Monday morning, October 17. The strike, which was not supported by the executive of the National Union of Railwaymen, arose out of a demand that a travelling ticket collector, whose membership of the union had lapsed, should be removed or rejoin the union. A negotiating committee of the executive of the union persuaded the strikers at a mass meeting on Saturday to return to work, informing them that the railway company had given a guarantee that there would be no victimisation and no intimidation and that arrangements had been made for every man who came out on strike to go back to his rostered turn of duty.

## G.W.R. Ambulance Work, 1937-8

### Successes in internal competition and in inter-railway events

A further record has been achieved by the Great Western Railway Ambulance Centre for the year ended June 30, 1938, the number of successful students being no fewer than 7,979, an increase of 196 over the previous year's record figure. Of this number, 797 were recruits to the movement, having obtained the first-year certificate of the St. John Ambulance Association. The Athlone Bowl, the gift of the Earl of Athlone, awarded to the division gaining the highest number of recruits in proportion to the total staff, has for the second time been won by the Central Wales Division with a percentage of 2.67; the runner-up was the Gloucester Division, with a percentage of 2.02.

The divisional competitions, held in the spring of the year, attracted an increased entry, 276 teams competing, 123 in Class 1 and 153 in Class 2. Challenge trophies and prizes in kind for teams entering in either class were awarded in all seventeen ambulance divisions, and presentations were made to the winning teams by the divisional officers. The eight teams securing highest marks in the semi-final competition met in the final competition at Paddington on April 29, when the premier trophy, the Directors' challenge shield, was won by the Pilning team, and the Carvell Cup by the Westbury team as runner-up. The Chairman of the company, the Rt. Hon. Viscount Horne, P.C., G.B.E., who is President of the centre, presented the trophies and prizes.

The "Henry Butt" Challenge Bowl, was awarded to the Pilning team, which attained the highest place of any beginners' team in the series of competitions. The Pilning and Westbury teams represented the company at the inter-railway competition, held at the Wharncliffe Rooms, on May 26. At the Welsh inter-railway competition held at Cardiff, on December 2, 1937, the Harry Webb Cup was won for this company for the eleventh time, the winning team being Newport, High Street.

For the first time since the formation of the centre, a competition for women employees only was held at Paddington, on March 29, when the challenge trophy presented by Mrs. J. F. Lean was competed for by seven teams; the winning team was Shrewsbury, with Paddington as runner-up. A further trophy has been presented to the centre this year by Mr. J. W. A. Kislingbury, Divisional Locomotive Superintendent, and takes the form of a silver cup for individual work by members of the Old Oak class.

Numerous reports of exceptionally efficient first-aid rendered by the staff have come to hand during the year, and were adjudicated upon by the company's Chief Medical Officer, and gold, silver, and bronze medals and special framed certificates awarded to the most meritorious cases. The stan-

dard of work reported was extremely high. These awards were presented by the Chairman on the occasion of the final competition.

During the year, 365 gold medals for 15 years' first-aid efficiency were awarded, in addition to which 95 members of the staff qualified for the company's 20-year bar, 79 for the quarter-century medal, and 28 and 6 men for the 30 and 35 years' efficiency bar respectively. The total number of long-service awards issued since their inception is 5,043, made up as under:—

15-year gold medals ...	2,972
20 " " bars ...	1,290
25 " " medals ...	593
30 " " bars ...	157
35 " " bars ...	31

As in past years, the gold medallists organised an outing together, which was held in London and Windsor on May 28, when the party (medallists and wives) numbered about 700.

A tribute of appreciation is due not only to the members of the medical profession who act as lecturers and competition judges, but to the continued good work and enthusiasm of the re-

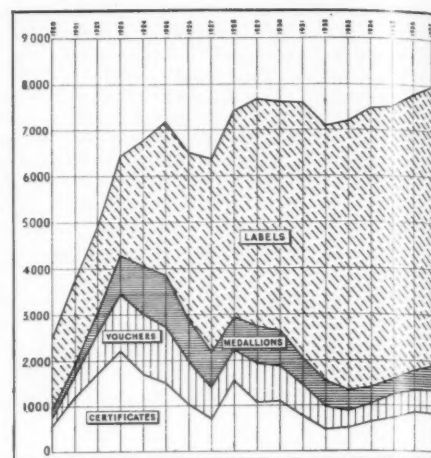


Chart showing first-aid awards, 1920 to 1937-8

spective secretaries and lay instructors in all parts of the line, and it is gratifying to report that in recognition of such services, sixteen members of the staff have, on the recommendation of the Central Ambulance Committee, been admitted as Serving Brothers of the Venerable Order of St. John of Jerusalem, while four others have been awarded the Vellum Vote of Thanks.

## French Rail and Road Co-ordination

A series of Decrees aimed at restricting competition between road and rail services in France has been signed by President Lebrun. The first two Decrees concern the transport of passengers, and eight others the co-ordination of goods transport. The first Decree fixes identical passenger fares where rail and road services cover approximately the same ground. There is no provision for compensation if a falling off in road traffic results. The second Decree authorises "collective taxis," where these are justified by circumstances. Passengers may combine to pay a taxi fare, but taxis must charge every client 20 per cent. more than the corresponding bus or underground railway fares.

The most important Decree regarding goods transport states that long-distance road transport must charge as much as long-distance rail transport, so that the only kind of competition permissible is in quality of service. Long-distance road transport has lately been competing successfully with rail transport, and motorists have complained of the ever-increasing number of lorries and vans on the road.

The Decree of August 31, 1937, provided for a classification of goods transport in three categories—urban, short-distance, and long-distance—and for some time past the competent departments have been drafting regulations designed to allow of a normal and regular working of road transport services, without competing with the rail-

ways. The regulations relating to urban transport (defined as services involving the carriage of goods by road from one point to another within the same urban zone) appeared in the *Journal Officiel* of September 16. Hitherto, under the provisions of the decree law of June 30, 1938, urban transport was subject to a quota system, and no contractor was allowed to increase his tonnage. This restriction threatened to interfere with the normal development of transport services and to hamper the speedy delivery of goods.

Under the new rules, no transport operation may be carried out without a permit issued by the Prefect, on the recommendation of the county technical committee. Such permits will be granted in respect of vehicles that were regularly registered as having been used for urban transport services before April 21, 1934. In the case of firms who at that time employed horses, and who now wish to replace them by mechanical transport, permits will be issued up to a maximum of two tons for every horse replaced. Long-distance transport undertakings will be granted urban transport licences, upon their undertaking to adopt mixed rail and road services for their long-distance traffic. New undertakings may be set up, provided that the committee makes a favourable recommendation. Chambers of Commerce are empowered to ask for the establishment of new undertakings if they consider that existing arrangements are inadequate.



## South Coast Resorts and Mr. F. V. Milton

Presentation from advertising committees to former  
Southern Railway Superintendent of Advertising

Mr. F. V. Milton, who retired on August 30 from the post of Superintendent of Advertising, Southern Railway, was last Wednesday entertained to luncheon at the Grosvenor Hotel, London, by the advertising committees of the Southern resorts with which his duties brought him into contact, and was presented with a gold hunter watch and an illuminated address.

Councillor H. W. G. Bishop, of Brighton, presided, and said they had met to recognise in some small way the valuable work Mr. Milton had done to advertise the South Coast resorts. To do him honour, representatives had come together from Bournemouth, Brighton, Broadstairs, Deal, Exeter, Exmouth, Hastings, Hove, the Isle of Wight, Lyme Regis, Margate, Ramsgate, Seaford, Southsea, and Weymouth. Of the 50 years Mr. Milton had spent with the railway, 26 had been in advertising. Few men had done more to promote the interest of the Southern resorts than he had. To show their gratitude they were presenting him with a gold watch, inscribed: "Presented to F. V. Milton, Esq., as a mark of appreciation by Southern resorts upon his retirement from the Southern Railway, August 30, 1938." The local authority of which he was a member would still benefit from Mr. Milton's services, and he would always be welcomed by themselves when he followed his own advice and spent his holidays on the Southern Coast.

Mr. Bishop's remarks were seconded by Mr. Brown (Bournemouth), who said the growth of resorts in the South had been largely due to the way in which the railway, through Mr. Milton, had helped. Further expressions of gratitude to Mr. Milton were voiced by the representatives of Hastings, Sheerness, the Isle of Wight, Exmouth, and Hove. The Chairman then handed the gold watch to Mr. Milton and unveiled the illuminated address from the Southern resorts.

Mr. F. V. Milton, acknowledging the presentation, said the happiest part of his work on the railway had been that in connection with the resorts and the officials who ran them. He could claim to have something to do with building up the resorts. Fifty years ago there was no such thing as advertising as it was known today. Co-operation between towns and railways was never even dreamed of. The L.S.W.R. took the first step forward when, 40 years ago, it authorised publication of a guide book advertising farmhouses and apartments offering accommodation to visitors, and he was happy to say he had something to do with the issue of that guide, which grew up to be "Hints for Holidays," of which he had been Editor for 26 years. In 1913 Sir Herbert Walker grouped all L.S.W.R. advertising in one department, and he (Mr.

Milton) was placed in charge of it. In co-operation with the Great Northern Railway he launched the first co-operative advertising scheme between railways and resorts, by persuading Southern municipalities to display coloured pictures in the windows of

G.N.R. offices in the Midlands and North, and arrange for literature to be available to enquirers. Bournemouth was the first resort to be approached, and gave its support to the scheme.

Mr. Milton thanked the resorts for all they had done to make his business life agreeable. He attributed the excellent health in which he was now enjoying his retirement to the weekly visits he had paid to the South Coast resorts.

## Metospir Permanent Way Fastening

For tightening loose coach screws used to hold chairs, soleplates or flat-bottomed rails to wooden sleepers, the ingenious device known as Metospir, which was illustrated and described in THE RAILWAY GAZETTE of July 10, 1936, has met with remarkable success, particularly in France, where, in the course of a single year, over 7,000,000 have been used and further supplies are constantly being requisitioned. Metospir is known in France as *Garniture A. Streit*. It may be recalled that Metospir fastenings consist of flexible metal strips of special V-section which by means of a mandrel and shaping nut are formed

into spirals for insertion into the thread of the screw holes which may have become worn. The coach screw is then reinserted and grips the Metospir to form a new tight and lasting fastening. The play is taken up and the grip of the thread is deepened and reinforced.

These Metospir fastenings are manufactured in England by The Mint, Birmingham, Ltd., and their price has been considerably reduced. An advantage of this type of tightening is the speed with which it can be applied, experience having shown that 70 can be fixed by a gang of four men an hour.

## Exports of Railway Material from the United Kingdom in September

	Sept., 1938	Sept., 1937	Nine Months Ending Sept., 1938	Sept., 1937
Locomotives, rail .. .. .	151,820	71,465	1,207,946	827,728
Carriages and wagons .. .. .	223,073	134,092	2,393,272	2,035,704
Rails, steel .. .. .	42,548	75,723	859,795	1,073,830
Wheels, sleepers, fishplates and miscellaneous materials .. .. .	184,668	148,299	1,652,592	1,167,746

Locomotive and rail exports included the following:—

	Locomotives		Rails	
	Sept., 1938	Sept., 1937	Sept., 1938	Sept., 1937
Argentina .. .. .	10,143	5,671	5,487	801
Union of South Africa .. .. .	—*	—*	31,840	1,730
British India .. .. .	35,921	17,817	6,927	7,644

\* Figures not available

## Forthcoming Events

- Oct. 21 (Fri.).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, 6 p.m. Presidential Address, by Mr. D. Roberts.
- Oct. 22 (Sat.).—Stephenson Locomotive Society (Scottish), at Mathiesons, Falkirk, 3 p.m. Annual Meeting and Supper.
- Oct. 24 (Mon.).—G.W.R. (Birmingham) Lecture and Debating Society, at Great Western Hotel, Snow Hill Station, 6.30 p.m. "Air Raid Precautions," by Mr. W. Sadler.
- Stephenson Locomotive Society (Scottish), at Royal Technical College, George Street, Glasgow, 7.30 p.m. "The Development of South Wales Railways," by Mr. S. Beaver.
- Oct. 25 (Tues.).—Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 6 p.m. Address by Mr. G. S. Szlumper, C.B.E.
- Oct. 26 (Wed.).—Institute of Metals (London), at Royal School of Mines, South Kensington, S.W.7, 8 p.m. "Electron Diffraction and Surface Wear," by Prof. G. Finch.

- Institute of Welding, at Grosvenor House, Park Lane, London, W.1, 7.30 for 8 p.m. Annual Dinner.
- Institution of Locomotive Engineers (London) at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 6 p.m. "The Fatigue Strength of Machined Tyre Steels," by Mr. T. Baldwin.
- Oct. 27 (Thurs.).—G.W.R. (London) Lecture and Debating Society, in General Meeting Room, Paddington Station, 5.45 p.m. "Experiences of a Railway Engineer in West Africa," by Mr. D. Heslop.
- Institute of Metals, at Inst. of Mechanical Engineers, Storey's Gate, London, S.W.1, 10 a.m. Autumn Meeting.
- North East Coast Inst. of Engineers and Shipbuilders (Tees-side), "Railway Signalling and Telegraphing," by Mr. A. E. Tattersall.
- Southern Railway (London) Lecture and Debating Society at Chapter House, St. Thomas' Street, S.E.1, 5.45 p.m. "Southampton Docks: 1838-1938," by Mr. R. Biddle.

## NOTES AND NEWS

**Vickers Aviation.**—Vickers Limited announces that the works and business of Vickers (Aviation) Limited and the Supermarine Aviation Works (Vickers) Limited are being taken over by Vickers-Armstrongs Limited.

**Expected Compromise Recommendation in U.S.A. Labour Dispute Arbitration.**—Messages from the United States expect, on usually sound authority, that the emergency board will recommend a temporary suspension of wage increases by 5 or 7 per cent., which may be accepted by the unions, if *The Times* is correctly informed.

**A Nicaraguan Extension.**—It is reported from Managua that the new branch line from Chinandega to Puerto Morazan was inaugurated on September 15. The new line will facilitate traffic between the capital and the gulf of Fonseca, and as the neighbouring republics of Honduras and Salvador have also railways running to the gulf, communications with those countries will be furthered by the new extension.

**Further "1888 Flying Scotsman" Excursions.**—During its exhibition at Norwich Thorpe station from October 24 to 29, the L.N.E.R. Flying Scotsman of 1888 will, on October 26 and October 28, run public excursions respectively from Norwich to Ipswich and to Yarmouth. At Norwich, the train will be exhibited alongside a modern "Sandringham" class locomotive and L.N.E.R. composite coach.

**Hoteliers' Visit to Scotland.**—A party of over 120 prominent hotel-keepers from Canada, the U.S.A., Japan, and 14 European countries has this week been visiting Scotland under the auspices of the Hotels and Restaurant Association of Great Britain. The journey from King's Cross to Edinburgh was made on October 17 in a train of L.N.E.R. Coronation stock, which ran non-stop, and the party proceeded to Gleneagles the next day in a special L.M.S.R. train. Today (Friday) the party is returning from Glasgow to Euston in an advance portion of the L.M.S.R. Royal Scot. The visitors have been entertained throughout in the hotels of the L.M.S.R. and L.N.E.R. at Gleneagles, Glasgow, and Edinburgh.

**Further Reminders of the Indian Bihta Derailment.**—A Reuters message from Patna, dated October 16, states that 18 down Punjab-Howrah express—the train that was involved in the disastrous derailment at Bihta 15 months ago—was again derailed on Sunday, October 16, near Moghalsarai on the East Indian Railway. Official railway circles in Delhi attribute this further accident to the malicious removal of a rail. Three persons are stated to have been killed and 37 injured, 11 of them seriously. Meanwhile, the Pacific Locomotive Committee completed its

tour of Indian railways and sailed for home from Bombay on the P. & O. SS. *Narkunda* on Saturday, October 15 (see also page 697).

**Canadian Transcontinental Air Route.**—The Montreal-Winnipeg-Vancouver service of Trans-Canada Air Lines (a subsidiary of the C.N.R.) was inaugurated on October 17. At first goods and mails only are being carried, and this service will be tested for several weeks before the route is opened to passengers.

**Sixth Avenue Elevated Line in New York.**—It is reported from New York that the Sixth Avenue Elevated line of the Manhattan Railway Company was sold at a foreclosure on October 13 to bondholders for \$12,500,000. The bondholders recently made an agreement with the Mayor of New York to sell the line to the municipal authorities for that amount, a part of the transaction including the surrender of a lien for \$9,000,000 held by the City on account of taxes. The municipal authorities intend to demolish the line as soon as they take over possession. Further reference to these arrangements was made in an editorial article on page 510 of our issue of September 23.

**Mainz Station Roof.**—It is announced that the long overall arch roof of the former Central station at Mainz, opened by the Hesse-Ludwig Railway in October, 1884, is to give place to a more suitable structure. It was built by a well-known structural engineer of the day named Gerber, and was of unusual length, 300 m. (328 yards), and 42 m. (138 ft.) wide, making it a remarkable overall roof for its time. Such a long station was necessary because local conditions prevented a wider one being built. The new roofing, of all-welded construction and rectangular shape, will be only 165 m. (180 yards) long, and the platforms beyond it are to have umbrella roofing. The work is to be completed in about twelve months.

**Collision at Herne Hill, Southern Railway.**—A collision occurred on Saturday, October 15, outside Herne Hill station, S.R., when the 2.4 p.m. steam train from Victoria to Ramsgate ran into the rear of the 2.2 p.m. electric train, Holborn to Orpington, which had just left the platform. The signalman at the South signal box, realising that a collision was imminent, threw his signals to danger for the down main line and ran towards the oncoming steam train, showing a hand signal to stop. The locomotive became locked in the rear driving compartment of the electric train; the guard and two passengers in the latter were the most seriously hurt. Many passengers were thrown down, as both trains were full. Only the guard, however, had to be detained in hospital. There were no fatalities. Traffic had to be diverted via the Catford Loop line, and the line was

not clear for normal running for some hours. It is understood that the express normally precedes the electric train at this point, where the lines from the City and Victoria converge.

**Railway Club Meeting.**—The London & Birmingham Railway was the subject of a paper read by Mr. H. W. Bardsley at the monthly meeting of the Railway Club, held at the Royal Scottish Corporation Hall, Fetter Lane, E.C., on October 6 last. Mr. Bardsley dealt with the Parliamentary vicissitudes of the company in 1832, 1833, 1835, and 1837, the constructional difficulties of the line, its management and operation, rolling stock and motive power. The paper concluded with an excellent series of lantern slides made and shown by Mr. L. T. Catchpole.

**Art Without Advertising.**—Two autumn landscape posters now being exhibited by London Transport are without any advertising material except the board's familiar "bar and circle" device unobtrusively placed in one corner. Their message to the public is given on separate sheets displayed with them. The posters are the work of Mr. E. McKnight Kauffer, who has been producing designs for the former Underground group and for the board for 20 years. It is the high artistic quality of his two autumn designs that has led the board to take the unusual step of publishing them as pictures rather than posters.

**Enginemen's Improvement Classes Conference.**—The fourth annual conference of the Federation of Enginemen's Mutual Improvement Classes was held at the Science Museum, South Kensington, on October 2. The formal business of the federation was disposed of in the morning, and in the afternoon the gathering of about 70 who attended the conference heard a lecture from Mr. C. F. Cleaver, of the Associated Equipment Co. Ltd., on "Diesel Railcars." Messrs. L. P. Parker and W. A. Agnew are again respectively President and Vice-President of the federation, but Mr. A. E. Jennings has succeeded Mr. A. King as Federation Secretary, Mr. King having been appointed Education Secretary.

**Enfield Level Crossing Scheme.**—On the application of the Enfield Urban District Council, the Minister of Transport has made a grant from the Road Fund towards the cost of constructing a road bridge, 50 ft. wide, over the Cambridge main line of the L.N.E.R. at Brimsdown station. The bridge will replace the existing level crossing at Brimsdown station and also enable road traffic to avoid the level crossing in Ordnance Road. Work is to begin as soon as tenders are approved. At the present time the level crossings afford the only means of access to the industrial area which lies between the railway and the River Lee Navigation. Together with approach roads, the bridge will have a length of about 660 yd. and is estimated to

cost £45,000. It is designed to accommodate a 30-ft. carriageway and two foot-paths.

**Metropolitan Graduate & Student Society.**—The meetings for the 1938-39 session of the Metropolitan Graduate & Student Society, Institute of Transport, will begin on October 25, when there will be a reception and a short address by Mr. Gilbert S. Szlumper, President of the institute. All meetings except the inaugural reception, which will begin at 6.0 p.m., are to be held at 5.30 p.m., for 6.0 p.m., at the Institution of Electrical Engineers, Victoria Embankment, W.C.2. The annual reunion will take place at the Windsor Castle Restaurant, Victoria, S.W.1, on November 16.

**President Roosevelt Appoints Board to Investigate Wages Dispute.**—After the announcement of the overwhelming majority of American railway employees in favour of a strike unless the recent decision of the managements to institute a 15 per cent. wage cut was reversed, President Roosevelt, on September 27, appointed an

emergency board of three to investigate the cause of the dispute and report within 30 days from that date. The three members of this board are: Judge Walter P. Stacy, a Chief Justice, Chairman; Dr. Harry A. Mills, Professor of Economics at the University of Chicago; and Dean James M. Landis of the Harvard Law School. Both Judge Stacy and Dr. Mills have previous experience of labour arbitration.

**Road Accidents.**—The Ministry of Transport return for September of persons killed or injured in road accidents is as below. The figures in brackets are those for the corresponding period of last year:—

	Killed	Injured
England		
Pedestrians ...	179 (194)	5,101 (5,287)
Others... ..	311 (312)	12,507 (13,194)
Wales		
Pedestrians ...	8 (6)	223 (229)
Others... ..	10 (7)	489 (480)
Scotland		
Pedestrians ...	25 (32)	660 (703)
Others... ..	21 (32)	1,125 (1,042)

554 (583) 20,105 (20,935)  
The total fatalities for the preceding month were 562, compared with 612.

## British and Irish Traffic Returns

GREAT BRITAIN	Totals for 41st Week			Totals to Date		
	1938	1937	Inc. or Dec.	1938	1937	Inc. or Dec.
L.M.S.R. (6,834 mls.)						
Passenger-train traffic...	465,000	487,000	- 22,000	21,926,000	21,914,000	+ 12,000
Merchandise, &c. ...	446,000	563,000	- 117,000	18,420,000	20,235,000	- 1,815,000
Coal and coke ...	266,000	263,000	+ 3,000	10,160,000	10,387,000	- 227,000
Goods-train traffic ...	712,000	826,000	- 114,000	28,580,000	30,622,000	- 2,042,000
Total receipts ...	1,177,000	1,313,000	- 136,000	50,506,000	52,536,000	- 2,030,000
L.N.E.R. (6,315 mls.)						
Passenger-train traffic...	319,000	307,000	+ 12,000	14,190,000	14,272,000	- 82,000
Merchandise, &c. ...	329,000	363,000	- 34,000	12,886,000	13,863,000	- 977,000
Coal and coke ...	261,000	271,000	- 10,000	9,592,000	10,030,000	- 438,000
Goods-train traffic ...	580,000	634,000	- 54,000	22,478,000	23,953,000	- 1,475,000
Total receipts ...	909,000	941,000	- 32,000	36,668,000	38,225,000	- 1,557,000
G.W.R. (3,737 mls.)						
Passenger-train traffic...	200,000	199,000	+ 1,000	9,222,000	9,288,000	- 66,000
Merchandise, &c. ...	201,000	221,000	- 20,000	7,592,000	8,192,000	- 600,000
Coal and coke ...	118,000	117,000	+ 1,000	4,376,000	4,554,000	- 178,000
Goods-train traffic ...	319,000	338,000	- 19,000	11,968,000	12,746,000	- 778,000
Total receipts ...	519,000	537,000	- 18,000	21,190,000	22,034,000	- 844,000
S.R. (2,148 mls.)						
Passenger-train traffic...	291,000	287,000	+ 4,000	13,734,000	13,780,000	- 46,000
Merchandise, &c. ...	65,000	71,000	- 6,000	2,490,000	2,600,000	- 110,000
Coal and coke ...	35,000	31,000	+ 4,000	1,233,000	1,244,000	- 11,000
Goods-train traffic ...	100,000	102,000	- 2,000	3,723,000	3,844,000	- 121,000
Total receipts ...	391,000	389,000	+ 2,000	17,457,000	17,624,000	- 167,000
Liverpool Overhead ...	1,213	1,278	- 65	56,128	53,551	+ 2,577
Mersey (4½ mls.) ...	4,450	4,269	+ 181	179,827	172,323	+ 7,504
*London Passenger Transport Board ...	580,500	574,100	+ 6,400	9,015,600	8,975,600	+ 40,000
IRELAND						
Belfast & C.D. pass. (80 mls.)	1,832	1,873	- 41	106,869	110,559	- 3,690
" " goods	380	508	- 128	17,886	19,979	- 2,093
" " total	2,212	2,381	- 169	124,755	130,538	- 5,783
Great Northern pass. (543 mls.)	10,900	10,050	+ 850	467,450	471,000	- 3,550
" " goods	11,400	10,250	+ 1,150	368,300	389,600	- 21,300
" " total	22,300	20,300	+ 2,000	835,750	860,600	- 24,850
Great Southern pass. (2,076 mls.)	32,190	31,362	+ 828	1,550,502	1,547,665	+ 2,837
" " goods	49,385	48,200	+ 1,185	1,629,915	1,675,331	- 45,416
" " total	81,575	79,562	+ 2,013	3,180,417	3,222,996	- 42,579

\* 16th week (before pooling)

## British and Irish Railway Stocks and Shares

Stocks	Highest 1937	Lowest 1937	Prices	
			Oct. 19, 1938	Rise/Fall
G.W.R.				
Cons. Ord. ...	67½	55½	301½	-1½
5% Con. Prefce....	127	108	91	-2½
5% Red. Pref.(1950)	113	109	94½	—
4% Deb. ...	113½	102½	102½	—
4½% Deb....	118	106	104½	—
4½% Deb....	124½	112	109½	—
5% Deb. ...	136½	122½	121½	—
2½% Deb....	76	64	66½	—
5% Rt. Charge ...	133½	118	118½	—
5% Cons. Guar. ...	133½	116½	111½	-1
L.M.S.R.				
Ord. ...	361½	25½	12½	+1
4% Prefce. (1923)	82½	65½	27	-1
4% Prefce. ...	92½	77½	51½	-3
5% Red. Pref.(1955)	107½	102	76½	-1
4% Deb. ...	108	99½	98½	—
5% Red. Deb.(1952)	117½	111	109½	—
4% Guar. ...	104	95½	90	-2
L.N.E.R.				
5% Pref. Ord. ...	121½	65½	4	—
Def. Ord. ...	64	3½	2½	—
4% First Prefce. ...	79½	63	25½	-1½
4% Second Prefce. ...	31½	21	10	—
5% Red. Pref.(1955)	101½	89½	46½	—
4% First Guar. ...	103	91½	80	-2
4% Second Guar. ...	97½	85½	58	-2
3% Deb. ...	84½	74	70	—
4% Deb. ...	107½	98½	91½	—
5% Red. Deb.(1947)	113½	106½	105½	+½
4½% Sinking Fund Red. Deb.	110½	105½	105½	+½
SOUTHERN				
Pref. Ord. ...	98½	83½	52½	-1
Def. Ord. ...	27½	16½	11½	+½
5% Pref. ...	126½	105½	94½	—
5% Red. Pref.(1964)	118	110½	100½	—
5% Guar. Prefce. ...	133½	116½	112½	—
5% Red. Guar. Pref. (1957)	118½	111½	110½	—
4% Deb. ...	112	101½	103	—
5% Deb. ...	135½	123½	122½	—
4% Red. Deb. 1962-67	113	105	104½	—
BELFAST & C.D.				
Ord. ...	5	4	4	—
FORTH BRIDGE				
4% Deb. ...	106	99½	100½	—
4% Guar. ...	105½	99	99½	—
G. NORTHERN (IRELAND)				
Ord. ...	11	5	2½	-1½
G. SOUTHERN (IRELAND)				
Ord. ...	50	21½	9	—
Prefce. ...	61	34	13½	—
Guar. ...	94½	69½	36	—
Deb. ...	95	82½	59	+3
L.P.T.B.				
4½% "A" ...	123½	110½	115½	-1
5% "A" ...	135	121½	123½	—
4½% "T.F.A." ...	108½	104	104	—
5% "B" ...	125	114½	116½	—
"C" ...	99½	75	76½*	+4
MERSEY				
Ord. ...	42½	22	19	-1
4% Perp. Deb. ...	103	96½	97½	—
3% Perp. Deb. ...	77½	74½	67½	—
3% Perp. Prefce. ...	68½	61½	59	—

\* ex dividend



## CONTRACTS AND TENDERS

The Associated Equipment Co. Ltd., has received an order from London Passenger Transport Board for 167 diesel-engined Regent double-deck passenger vehicles.

Armstrong, Whitworth & Co. (Pneumatic Tools) Limited has received an order from the Buenos Ayres Great Southern Railway for 12 pneumatic riveting hammers.

The Westinghouse Brake & Signal Co. Ltd. has received an order from the Assam Bengal Railway Administration, to the inspection of Messrs. Rendel, Palmer & Tritton, for 70 Neale's single-line tablet instruments.

Hurst Nelson & Co. Ltd. has received an order from the Jodhpur Railway Administration to the inspection of Messrs. Rendel, Palmer & Tritton, for three bogie carriage underframes, metre-gauge, IRS standard, 56 ft. long over headstocks, 7 ft. 5½ in. wide over solebars and complete with wheels and axles and vacuum brakegear.

Kitchen & Wade Limited has received an order from the Buenos Ayres Western Railway for one honing machine for diesel railcar cylinder blocks.

Banting & Tresilian Limited has received an order from the Bombay, Baroda & Central India Railway to the inspection of Messrs. Rendel, Palmer & Tritton, for 27 copper firebox plates.

The Mysore State Railways Administration has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

Wm. Beardmore & Co. Ltd.: 270 locomotive, carriage, and wagon tyres.

Superheater Co. Ltd.: Quantity of superheater elements.

Uddeholm General Agencies Limited: 734 steel boiler and 55 flue tubes.

Steel, Peech & Tozer: 298 laminated springs.

The Barrow Haematite Steel Co. Ltd. has received an order from the Buenos Ayres Western Railway for 1,500 pairs of steel fishplates for 100-lb. electrified track.

Balmer Lawrie & Co. Ltd. has received an order from the Indian Stores Department for 1,127 cwt. mild steel rounds, at a total price of Rs. 10,988.

Steel, Peech & Tozer has received an order from the Cordoba Central Railway for 271 locomotive tyres, 38 locomotive axles, and 100 carriage and wagon axles.

The Bengal-Nagpur Railway Administration has recently placed the following orders:—

Superheater Co. Ltd.: Superheater elements and headers.

Blaenavon Co. Ltd.: 184 steel locomotive tyres.

Beyer, Peacock & Co. Ltd.: One steel locomotive firebox.

Uddeholm General Agencies Limited: 2,062 boiler tubes and 275 superheater flue tubes.

Beyer, Peacock & Co. Ltd. has received an order from the Buenos Ayres Great Southern Railway for five low-pressure cylinder castings.

Jessop & Co. Ltd. has received an order from the Indian Stores Department for a total of 1,507 cwt. of mild steel rounds, at a total price of Rs. 14,693.

Holman Brothers Limited has received an order from the Buenos Ayres Great Southern Railway for 12 pneumatic drilling machines.

The Chinese Government Purchasing Commission has placed the following orders, to the inspection of Messrs. Fox & Mayo:—

Abtus Limited: 45 sets of hand-pump trolleys.

Fellows Bros. Ltd.: 20 traversing screw jacks.

Consolidated Pneumatic Tool Co. Ltd.: 35 sets pneumatic drilling and riveting equipment.

Holman Bros. Ltd.: Seven sets air-compressors.

R. A. Lister & Co. Ltd.: Seven sets centrifugal pumps with diesel engines.

W. H. Allen Sons & Co. Ltd.: Four sets generating plant with spares.

British Steel Piling Co. Ltd.: Four sets steam hoists with boilers.

The Crown Agents for the Colonies have recently placed the following orders:—

Lilleshall Co. Ltd.: M.S. angles.

Kitchen & Wade Limited: Arm drilling machine.

Automatic Telephone & Electrical Co. Ltd.: Automatic telephone exchange equipment.

Whitehead Iron & Steel Co. Ltd.: M.S. bars.

Guest, Keen & Nettlefolds Limited: Bolts and nuts.

C. Richards & Sons Ltd.: Bolts and nuts.

Ismay Cables Limited: Cable.

Siemens Bros. & Co. Ltd.: Cable terminal boxes.

Stanton Ironworks Co. Ltd.: Corrugated iron socket and spigot pipes.

Dorman, Long & Co. Ltd.: Clear span deck bridges.

Motherwell Bridge & Engineering Co. Ltd.: Clear span deck bridges.

Patent Shaft & Axletree Co. Ltd.: Clear span deck bridges.

The Tees Side Bridge & Engineering Works Limited: Clear span deck bridges.

A. Findlay & Co. Ltd.: Clear span through bridges.

I.C.I. Metals Limited: Copper ingots and locomotive copper plates.

The Yorkshire Copper Works Limited: Copper tubes.

R. Johnson & Nephew Limited: Copper wire.

Spencer Wire Co. Ltd.: Copper wire.

The A.B.C. Coupler & Engineering Co. Ltd.: Coupler and drawbar spares.

W. T. Henley's Telegraph Works Co. Ltd.: Dry core cable.

Pirelli-General Cable Works Limited: Dry core cable.

Stothert & Pitt Limited: Electric capstans.

General Electric Co. Ltd.: Electric lamps.

Turners Asbestos Cement Company: Everite pipes.

Siemens Bros. & Co. Ltd.: Extension to switchboard.

D. Morgan Rees & Sons Ltd.: Flexible steel wire rope.

J. Summers & Sons Ltd.: Galvanised corrugated iron sheets.

Dorman, Long & Co. Ltd.: Galvanised corrugated steel sheets.

Wolverhampton Corrugated Iron Co. Ltd.: Galvanised corrugated steel sheets.

Wellington Tube Works Limited: Galvanised W.I. pipes and fittings.

Norris, Henty & Gardners Limited: Gardner diesel engines.

National Gas & Oil Engine Co. Ltd.: Generating sets.

British Tabulating Machine Co. Ltd.: Hollerith reproducing punch.

J. Baker & Bessemer Limited has received an order from the Buenos Ayres Great Southern Railway for

250 solid forged steel carriage and wagon wheels.

Martin & Co. has received an order from the Indian Stores Department for a total of 2,243 cwt. of mild steel rounds, at a total price of Rs. 23,315.

Leyland Motors Limited has received an order from the East Kent Road Car Co. Ltd. for six oil-engined single-decked passenger vehicles.

John I. Thornycroft & Co. Ltd. has recently received the following contracts:—

Compania Internacional de Transportes Automoviles, B.A.: An order through Thornycroft's Argentine branch for 10 of the latest type 26-seated bus chassis fitted with Perkins P.6 oil engines. The C.I.T.A. is a subsidiary company of the Buenos Ayres & Pacific Railway, which operates extensive road services in Mendoza. The vehicles in the latest order will be fitted with locally-built bodywork for operation in rural areas where large distances are covered between towns.

Lourenco Marques System, Portuguese Government Railways: A repeat order for a number of oil-engined buses for cross-country routes, incorporating the well-known Amazon class rigid-frame three-axle chassis. All metal bodywork will be supplied by Park Royal Coach Works Limited, and will have separate compartments for nine first class and 21 third class passengers.

Southern Railway: A further batch of Trusty class 7-ton vehicles, three of which will be supplied with platform bodywork and also trailer brake and drawbar gear for towing a 6-ton trailer. A further vehicle is being supplied as a solo machine and equipped with a van body.

The American Car & Foundry Co. Ltd. is reported to be supplying 1,000 40-ton freight cars to Illinois Central Railroad on a rental-purchase basis. The value of the order is \$2,000,000, which will be paid off over 15 years on a rental arrangement, the title being transferred to the railway at the end of that period. Delivery will start early next year.

Tenders are invited by the Burma Railways, receivable at the office of the Chief Railway Commissioner, Rangoon, by November 10, for the supply of vacuum brake fittings, and receivable by November 17, for oils and lubricants.

Tenders are invited by the Chief Controller of Stores, India Stores Department (Engineering Section), Simla, receivable by November 16, for the supply of the following pneumatic tools required for the North Western Railway at Moghalpura:—

- 11 Rotary type hand grinders.
- 12 Rotary reversible drilling machines.
- 6 Staybolt riveting hammers.
- 2 Riveting hammers for ½-in. and ¾-in. and 2 for 1-in. rivets.

The New Zealand Public Works Department is calling for tenders, to be presented in Wellington by November 15, 1938, for the supply of one 1-ton electric crane and one electrically-driven hoist block. Firms desirous of offering equipment of United Kingdom manufacture can obtain further details from the Department of Overseas Trade, London, S.W.1. Reference number T.Y. 27306/1938 should be quoted.

## OFFICIAL NOTICES

## South Indian Railway Co. Ltd.

NOTICE IS HEREBY GIVEN that the next ORDINARY GENERAL MEETING of the South Indian Railway Company Limited will be held at the Offices of the Company, 91, Petty France, Westminster, S.W.1, on Wednesday, the 26th October, 1938, at 12 Noon, for the purpose of receiving the Directors' Report and Statements of Accounts for the Year ended 31st March, 1938, and for the transaction of the ordinary general business of the Company.

The Transfer Books will be closed from Saturday, the 17th, to Saturday, the 31st day of December, 1938, both days inclusive, for the preparation of the half-yearly Warrants.

Transfers will not be received at the Office while the Books remain closed. The Warrants payable on and after the 2nd January, 1939, will be forwarded to the Proprietors on the 31st December, 1938.

By Order,  
E. A. S. BELL,  
Managing Director.

Company's Offices:  
91, Petty France,  
Westminster, S.W.1.  
5th October, 1938.

## THE MADRAS &amp; SOUTHERN MAHRATTA RAILWAY COMPANY LIMITED invite Tenders for:—

## 10 CRANK AXLES FOR LOCOMOTIVES—BROAD GAUGE.

Specification and Form of Tender can be obtained from the Company's Offices, 125, Victoria Street, Westminster, London, S.W.1. Fee ONE GUINEA, which will not be returned.

Tenders must be submitted not later than 2.00 p.m. on TUESDAY, 8th NOVEMBER, 1938.

The Directors do not bind themselves to accept the lowest or any Tender and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,  
V. CRASTER,  
Secretary.

REQUIRED, Traffic Manager for recently erected Steelworks abroad; must be capable of organising and taking full charge of all internal traffic. Salary and conditions will be communicated to suitable applicants. Apply with full particulars to Box 1010, THE RAILWAY GAZETTE, 33, Tothill Street, London, S.W.1.

## Bengal-Nagpur Railway Company Limited

THE Directors are prepared to receive Tenders for:—  
600 STEEL CARRIAGE AND WAGON TYRES.

Specification and Form of Tender can be obtained at the Company's Offices, 132, Gresham House, Old Broad Street, London, E.C.2, on or after 17th October, 1938.

A fee of 10s. will be charged for each copy of the Specification, which is NOT returnable. Tenders must be submitted not later than Noon on Thursday, 27th October, 1938.

The Directors do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,  
T. R. WYNNE,  
Managing Director.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—The Railway Gazette, 33, Tothill Street, Westminster, London, S.W.1.

## RAILWAY AND OTHER REPORTS

**Central Argentine Railway Limited.**—The directors' report for the year ended June 30, 1938, shows that gross receipts amounted to £9,315,262, a decrease of £2,901,786, or 23.8 per cent., and working expenses were £7,401,431, a reduction of £1,058,725, or 12.5 per cent., leaving a balance on working £1,843,061 lower, at £1,913,831. Exchange differences (£915,040) were £405,083 lower, making net receipts of £998,791, against £2,436,769. Adding £34,222 income from investments, &c., and £450,757 brought forward from the previous year gives a total of £1,483,770, compared with £2,907,106 for the previous year. Debenture stock interest, &c., takes £1,255,736, leaving a balance of £228,034 which it is proposed to carry forward. In the previous year the corresponding balance was £1,644,498, enabling the full dividend of £436,307 to be paid for the year on the 4½ per cent. preference stock, and two years' arrears of dividend (£600,000) on the 6 per cent. cumulative preference stock, together with a transfer of £157,434 to reserve for contingencies. Owing to the heavy decrease in gross receipts, due to the failure on a large scale of the wheat, maize, and linseed harvests, the directors have been unable to make any allocation from revenue account to renewals fund accounts during the year under review.

**Barsi Light Railway Co. Ltd.**—Net earnings for the year to March 31, 1938, less Indian income tax and super-tax amounted at 1s. 6d. exchange to £50,888, and with exchange adjustments to £51,175. After providing £8,900 for interest on debenture stocks and £5,673 for the interest and sinking fund instalment on the Labour Extension debentures there is left £36,602, which with £8,183 brought forward and £997 interest and dividends on investments makes £45,782. The directors have set aside £6,500 to reserve for renewals, which now stands at £10,000, the sum of £1,929 was required for dividend on the

6½ per cent. preference stock, and the interim dividend of 2 per cent. on the ordinary stock absorbed £14,606. The final dividend on the ordinary stock is 2 per cent., making 4 per cent. for the year (against 2½ per cent. for the previous year), leaving £8,140 to be carried forward. Gross receipts were Rs. 18,45,082, an increase of Rs. 3,10,118, but the working expenses of Rs. 10,58,378 were Rs. 28,637 lower, and the operating ratio improved from 70.82 per cent. to 57.36 per cent.

**Bengal Dooars Railway Co. Ltd.**—Gross earnings for the year to March 31, 1938, were Rs. 19,49,673, an increase of Rs. 2,21,024 in comparison with the previous year. In the working expenses of Rs. 11,66,416 there was an advance of only Rs. 68,372, reducing the operating ratio from 63.52 per cent. to 59.83 per cent. Net earnings were, therefore, Rs. 7,83,257, an increase of Rs. 1,52,652. In sterling, less Indian taxation, the net earnings realised £53,476, against £43,903 for 1936-37. The amount at credit of net revenue account is £83,249, from which the directors have placed £10,000 to reserve fund, and recommend a final dividend of 4 per cent., which will require £16,000, and leave £57,249 to be carried forward.

**Sentinel Waggon Works (1936) Limited.**—The trading profit for the 12 months to July 30 last of £35,764 contrasts with a trading loss of £4,216 for the 14 months to July 31, 1937. Net profit is £23,530, after deducting interest charges, &c., and writing off experimental and development expenditure £895, and depreciation £7,070. Deducting the debit balance of £13,024 brought in leaves £10,506. The directors have resolved to appropriate to general reserve the £5,371 of unsecured income notes, which will now be redeemed, and to write off £3,131 preliminary expenses, leaving £2,004 to be carried forward. Orders in hand, apart from the prospective turnover in H.S.G.

vehicles, are considerably in excess of the total output for 1937-38, and the directors expect at least to maintain the rate of profit for the year now current should no unforeseen crises occur.

**Kitchen & Wade Limited.**—The interim dividend is 12½ per cent. actual the same as a year ago.

**Hoffmann Manufacturing Co. Ltd.**—The directors announce an interim dividend of 7½ per cent., less tax, against 6 per cent., tax free.

**Northern General Transport Co. Ltd.**—An interim dividend of 4 per cent., less tax, is announced, the same as a year ago.

**Ransome & Marles Bearing Co. Ltd.**—Trading profits, after depreciation, for the year ended June 30 last, amounted to £219,953, against £220,318 for 1936-37. Taxation, however, absorbs £66,406, against £54,356, and the net available profit has fallen from £166,351 to £153,528. As already announced, the dividend for the year is again 20 per cent., but is payable on a larger capital. The sum of £32,586, against £80,000, is allocated to general reserve, and after allowing for directors' remuneration, the balance forward is £61,609, against £46,742 brought in.

**Ribble Motor Services Limited.**—An interim dividend of 4 per cent. is being paid, the same as at this time last year.

## Forthcoming Meetings

Oct. 26 (Wed.).—Buenos Ayres Great Southern Railway Co. Ltd. (Ordinary General), River Plate House, Finsbury Circus, E.C.2, at 12 noon.

OCT. 26 (Wed.).—Assam Railways & Trading Co. Ltd. (Ordinary General), Winchester House, Old Broad Street, E.C.3, at 12 noon.

OCT. 26 (Wed.).—South Indian Railway Co. Ltd. (Annual General), 91, Petty France, S.W.1, at 12 noon.

OCT. 27 (Thurs.).—Central Argentine Railway Limited (Ordinary General), River Plate House, E.C., at noon.

## Railway Share Market

Dull and inactive conditions have ruled in most sections of the Stock Exchange and values have moved against holders this week. Selling pressure was moderate, but there was little demand in evidence, largely because of a tendency to await news as to developments likely to arise from the accelerated armament programme, which may have important financial and industrial influences. On Wednesday the lower prices were inclined to attract buyers, partly owing to German demobilisation, which tended to have a beneficial effect on sentiment.

On balance movements in Home railway securities have been to rather lower levels as a result of the general market tendency, but in some cases earlier losses were partly regained on Wednesday. The traffic figures were better than had been expected, except in the case of the L.M.S.R. the abnormally large decrease in this case having arisen from recent labour troubles. Southern preferred became a firmer market at 52½ in sympathy with the increase in receipts for the past week, but the deferred stock was around

11½. L.N.E.R. junior issues were also steadier subsequently, as was the 4 per cent. first guaranteed stock, which at 79 now yields over 5 per cent. and seems reasonably assured of its full dividend for the current year. L.M.S.R. 4 per cent. preference was active around 51, but the 1923 preference failed to show a firmer tendency following the lower price made earlier in the week. The 4 per cent. guaranteed stock was steady around 89½, at which the yield is 4½ per cent. Great Western ordinary was weak at around 30, owing to the less hopeful views of dividend prospects which remain current, but the stock later became rather firmer in sympathy with the general trend of markets. The 5 per cent. preference stock made the reduced price of 91 and is now lower than Southern 5 per cent. preference, which is quoted at 94½. Debenture stocks were steady. Great Western 4 per cent. debentures were around 103 and yield over 3½ per cent., while Southern 4 per cent. debentures were 104 and L.N.E.R. 3 per cent. debentures around 69. The yield on the

last-named stock is over 4½ per cent., which would appear to be unduly generous. Elsewhere, London Transport "C" was better at 76½, awaiting the final decision in regard to an increase in bus fares.

Argentine railway securities received attention in view of the hopeful crop position, but improvement was largely confined to preference stocks and debentures. B.A. Gt. Southern 5 per cent. and 6 per cent. preference stocks and debentures were assisted by the statements in the annual report regarding crops and the outlook for the current year, while the ordinary stock showed a moderate gain to 12. B.A. Western and Central Argentine issues were also a better market this week. Argentine Great Western and B.A. & Pacific debentures participated in the improved tendency. Cordoba Central 4½ per cent. debentures were around 51. American railroad stocks were less prominent, but Canadian Pacific was firmer subsequently, and more attention was also given to the preference stock

### Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1937-38	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices							
			Total this year	Inc. or Dec. compared with 1937		Totals		Increase or Decrease		Highest 1937	Lowest 1937	Oct. 19 1938	Yield %				
						This Year	Last Year										
South & Central America	Antofagasta (Chili) & Bolivia	834	16 10.38	£ 12 200	-	£ 810	42	£ 616,180	£ 687 320	-	£ 71,140	Ord. Stk.	29	101½	11	5	Nil
	Argentine North Eastern	753	15.10.38	9,733	+	353	16	171,886	166,348	+	5,538	"	191½	6	5	Nil	
	Argentine Transandine	174	Sept., 1938	3,500	-	250	39	33,650	49,350	-	15,750	A. Deb.	93½	80	80	5	Nil
	Bolivar	174	Sept., 1938	3,500	-	250	39	33,650	49,350	-	15,750	6 p.c. Deb.	91½	5	8½	Nil	
	Brazil	2,806	15.10.38	71,712	-	11,601	16	1,104,655	1,250,994	-	146,339	Bonds	17	9	8½	5	Nil
	Buenos Ayres & Pacific	190	1.10.38	819,000	-	84,900	14	81,664,800	82,009,500	-	344,600	Ord. Stk.	171½	5½	5	Nil	
	Buenos Ayres Central	5,084	15.10.38	123,263	-	7,568	16	1,892,619	1,889,516	+	3,103	Mt. Deb.	41½	18	15	Nil	
	Buenos Ayres Gt. Southern	1,930	15.10.38	44,293	-	5,335	16	590,073	722,954	-	132,881	Ord. Stk.	33 4	13½	12	Nil	
	Buenos Ayres Western	3,700	15.10.38	100,152	-	15,627	16	1,588,937	2,086,143	-	497,206	"	31½	11½	8½	Nil	
	Central Argentine	972	8.10.38	17,030	+	1,324	15	238,641	225,768	+	12,873	"	31½	10½	9½	Nil	
	Do.	1,218	8.10.38	17,030	+	1,324	15	238,641	225,768	+	12,873	Dfd.	20½	4½	2	Nil	
	Cent. Uruguay of M. Video	188	Aug., 1938	23,553	-	1,064	9	46,815	49,305	-	2,490	Ord. Stk.	67½	2	2	Nil	
	Cordoba Central	70	Sept., 1938	15,800	-	1,400	39	148,000	139,600	+	8,400	Ord. Inc.	61½	1½	3	Nil	
	Costa Rica	810	15.10.38	14,212	+	2,059	16	242,882	222,901	+	19,981	Stk.	38	27	24½	8½	
	Dorada	710	15.10.38	10,800	-	900	42	276,600	309,400	-	32,800	1 Mt. Db.	107	106	105	5½	
	Entre Rios	1,092	15.10.38	8,363,798	-	446,862	35	\$3,818,615	\$3,954,618	-	\$136,003	Ord. Stk.	197½	6	7	Nil	
	Great Western of Brazil	794	Aug., 1938	\$363,798	-	\$46,862	35	\$3,818,615	\$3,954,618	-	\$136,003	Ord. Sh.	34	18	14	Nil	
	International of Cl. Amer.	22½	Sept., 1938	6,210	+	1,745	39	46,880	47,665	-	785	1st Pref.	2½	1/-	1½	Nil	
	Interoceanic of Mexico	1,918	15.10.38	26,018	+	2,580	42	861,291	972,989	-	111,698	Stk.	8½	6	12	Nil	
	La Guaira & Caracas	483	14.10.38	\$308,300	+	\$57,000	15	\$3,988,200	\$4,596,400	-	\$608,200	Ord. Stk.	91½	3	14	Nil	
	Leopoldina	319	Sept., 1938	6,992	-	2,103	13	25,076	23,734	+	1,282	"	11½	1½	1½	Nil	
Mexican	389	15.10.38	5,611	+	1,380	41	115,806	122,245	-	6,439	"	17½	2	1½	Nil		
Midland of Uruguay	274	15.10.38	\$2,884,000	+	\$255,000	16	\$47,871,000	\$51,064,000	-	\$3,193,000	Ord. Sh.	31½	2	17½	5½		
Nitrate	1,059	Sept., 1938	64,805	-	25,148	13	212,547	263,674	-	51,127	Pr. Li. Stk.	84	79½	57½	5½		
Paraguay Central	100	8.10.38	49,590	-	3,385	15	£163,768	£177,159	-	£13,391	Pref.	145½	4½	21½	Nil		
Peruvian Corporation	153	9.10.38	31,500	-	2,348	41	1,279,446	1,330,496	-	51,050	Pr. Li. Db.	23½	21½	22½	Nil		
Salvador	160	Sept., 1938	1,680	-	858	13	7,900	10,070	-	2,170	Ord. Sh.	17 6	11½	37	10½		
Taita	1,353	15.10.38	15,185	+	254	16	259,784	272,042	-	12,258	Ord. Stk.	56½	2½	1	Nil		
United of Havana	73	Sept., 1938	953	+	126	13	2,770	2,420	+	350	Deb. Stk.	10	2	1	Nil		
Uruguay Northern	23,750	14.10.38	857,140	+	54,510	41	27,823,881	30,879,458	-	3,055,577	"	77	62½	66	6½		
Canada	Canadian National	17,186	14.10.38	753,800	+	102,600	41	21,608,800	22,346,800	-	738,000	Perp. Dbs.	77	62½	66	6½	
	Canadian Northern	17,186	14.10.38	753,800	+	102,600	41	21,608,800	22,346,800	-	738,000	4 p.c. Gar.	1017½	4	100½	4	
	Grand Trunk	17,186	14.10.38	753,800	+	102,600	41	21,608,800	22,346,800	-	738,000	Ord. Stk.	18	74½	7	Nil	
India	Assam Bengal	1,329	30.9.38	50,070	+	6,778	26	695,684	657,947	+	37,737	Ord. Stk.	86	73½	76½	3½	
	Barisi Light	202	30.9.38	3,675	+	908	26	72,622	65,377	+	7,245	Ord. Sh.	66½	46	57½	6½	
	Bengal & North Western	2,116	30.9.38	69,282	+	2,561	26	1,377,258	1,450,833	-	73,575	Ord. Stk.	317	301	282	6½	
	Bengal Doonars & Extension	161	30.9.38	5,245	+	109	26	71,985	71,776	+	209	"	100	84	87½	7½	
	Bengal-Nagpur	3,268	30.9.38	193,725	+	9,000	26	3,401,887	3,444,398	-	42,511	"	101	89	92½	4½	
	Bombay, Baroda & Cl. India	3,085	10.10.38	22,125	+	900	27	4,483,875	4,566,450	-	82,575	"	113	110½	113½	5½	
	Madras & Southern Mahratta	2,967	30.10.38	132,525	-	686	26	2,752,735	2,637,577	+	115,158	"	110	105	103½	8½	
	Rohilkund & Kumaon	546	30.9.38	12,10	+	902	26	274,226	275,440	-	1,214	"	314	302	285	6½	
	South Indian	2,531	30.9.38	25,926	-	814	26	2,106,532	2,109,670	-	3,138	"	103½	99½	101½	4½	
	Various	Beira-Umtali	204	Aug., 1938	9 73	-	14,197	48	953,688	877,668	+	76,020	"	—	—	—	—
Egyptian Delta		620	30.9.38	6,638	-	1,069	26	103,698	110,839	-	7,141	Prf. Sh.	31	54	—	Nil	
Kenya & Uganda		1,625	Aug., 1938	182, 50	-	14,527	35	1,860,357	1,920,155	-	59,798	"	—	—	—	—	
Manila		277	Aug., 1938	4,414	+	1,736	9	27,657	22,923	+	4,734	B. Deb.	48½	43½	43½	8½	
Midland of W. Australia		1,900	3.9.38	27,059	-	5,037	23	666,548	1,087,232	-	420,684	Inc. Deb.	98	93½	90	4½	
Nigerian		2,442	Aug., 1938	416,841	-	21,777	48	4,539,620	4,203,086	+	336,534	"	—	—	—	—	
Rhodesia		13,263	8.10.38	605,779	-	31,531	28	16,865,039	17,473,991	-	608,952	"	—	—	—	—	
South Africa		4,774	July, 1938	716,345	-	3,187	5	716,345	719,532	-	3,187	"	—	—	—	—	
Victoria		4,774	July, 1938	716,345	-	3,187	5	716,345	719,532	-	3,187	"	—	—	—	—	

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1½

† Receipts are calculated @ 1s. 6d. to the rupee ‡ ex dividend

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading the amount being overestimated. The statements are based on the current rates of exchange and not on the par value